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**A normative model for assessing the competence of evidential
matter in auditing**

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University of Kentucky, 1989

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DISSERTATION

Alejandro Hazera

The Graduate School
University of Kentucky

1989

A NORMATIVE MODEL FOR
ASSESSING THE COMPETENCE OF EVIDENTIAL MATTER
IN AUDITING

DISSERTATION

A dissertation submitted in partial fulfillment of
the requirements for the degree of
Doctor of Business Administration
at the University of Kentucky

By

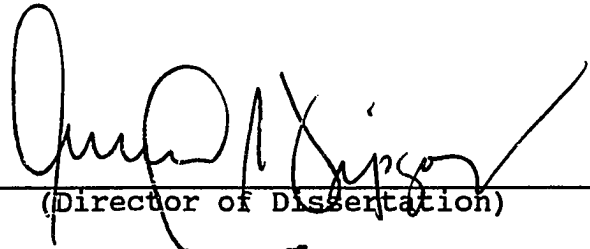
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1989

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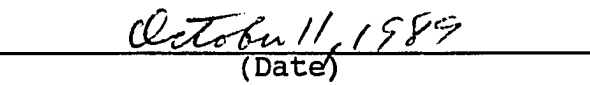
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ABSTRACT OF DISSERTATION

A NORMATIVE MODEL FOR ASSESSING
THE COMPETENCE OF EVIDENTIAL MATTER
IN AUDITING

Recently, the American Institute of Certified Public Accountants' Special Committee on Standards of Professional Conduct for Certified Public Accountants (Anderson Committee) and the National Commission on Fraudulent Financial Reporting (Treadway Commission) expressed concerns that some auditors may not be fully satisfying the third standard of fieldwork which requires them to obtain "sufficient, competent" evidential matter in support of their audit opinions. Considering these allegations, the accounting profession should ensure that it is providing its members with adequate official guidance on evidence evaluation.

A review of the literature revealed that while a substantial amount of research has been conducted toward determining the sufficiency of evidential matter, little research has been performed toward understanding the qualitative aspects of evidential matter. The objective of this research, therefore, was

to obtain more insight into the competence of evidential matter.

This objective was addressed by developing a model of evidential competence. The model was developed in four steps. First, concepts of evidence from the philosophy of science were used to identify the basic elements and procedural flow of the model. Subsequently, since philosophical concepts of evidence are ambiguous, legal concepts of evidence were used to clearly define the model's elements and place the model into an auditing context. The model's elements were then operationalized on the basis of Generally Accepted Auditing Standards and deductive logic. Finally, The model was tested by applying it to fifty-seven audit failures reported by the Securities and Exchange Commission from 1975 to the present. Regarding the final results, the model's elements described many of the circumstances in the audit failures, contributing to the current body of knowledge pertaining to standards or rules of evidential competence. However, some inconsistencies were found in the model's procedures.

Alejandro Hargrave

Oct 2, 1989

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CHAPTER 1
INTRODUCTION

1.0 Background

The third standard of fieldwork of the ten promulgated Generally Accepted Auditing Standards (GAAS) states that all auditors must obtain "sufficient, competent evidential matter" as a basis for formulating an opinion on an enterprise's financial statements. Recently, however, the Anderson Committee and the Treadway Commission have raised concerns that auditors may not be fulfilling the third standard of fieldwork.

The Anderson Report, for example, states that the accounting profession is currently in a state of crisis. The report refers to this crisis as the "public expectation gap." The causes of this "gap" are described by the report in the following manner:

The cause of the crisis is a fact that investors and depositors are losing faith in the ability of the accounting profession to perform the job which has historically been its unique role in our society-- assuring the integrity of the financial information upon which our capitalistic society necessarily depends (AICPA, 1985, p.14).

One of the major reasons cited by the Anderson Report for the onset of this crisis has been a perceived reduction in the quality and quantity of substantive evidence evaluation. This concern is

emphasized by the report (AICPA, 1985, p.13) as follows:

Studies indicate that CPAs are viewed as competent, efficient, and capable of providing quality in basic services. At the same time, they are viewed as more likely to cut corners and deviate from quality standards in the current environment than in the past.

The Anderson Committee's concerns about reductions in quality are supported by a study (Tabor and Willis, 1985) which indicates that auditors are increasingly using analytical review procedures as substantive evidence in place of costlier forms of evidence collection.

In addition to the concerns of the Anderson Committee, similar concerns have been raised by the Treadway Commission. Specifically, the Commission's report concludes that many audit failures have occurred because the auditors failed to "...conduct the audit in accordance with Generally Accepted Auditing Standards" (National Commission on Fraudulent Financial Reporting, 1987, p.21). The Treadway Report also states that, "...the most common alleged deviation from GAAS is the lack of sufficient, competent evidential matter" (National Commission on Fraudulent Financial Reporting, 1987, p.21). The Commission's assertion is supported by a study (Palmrose, 1987) which documents that a substantial amount of litigation against auditors has

been caused by the inability of some auditors to properly evaluate evidential matter.

The fact that the examination and evaluation of evidential matter play important roles in the audit process is indisputable. Moreover, given the concerns of the Anderson Committee and the Treadway Commission regarding the possibility that auditors may be "cutting corners" in examining and evaluating evidential matter, the accounting profession should ensure that it is providing its members with clear guidance on how the competence of evidential matter is defined and measured. Unfortunately, as the following discussion of Statement on Auditing Standards No. 31 indicates, not everyone is satisfied with the guidance currently being provided.

1.1 SAS 31 and the "Competence of Evidential Matter"

The guidelines of the American Institute of Certified Public Accountants (AICPA) for evaluating the competence of evidential matter are provided in Section 326 of the Codified Statements of Auditing Standards (AICPA, 1987). This section of the standards, entitled "Evidential Matter," will hereafter be referred to as Statement on Auditing Standards 31 (SAS 31). SAS 31 provides separate sections for defining "evidential matter" and the "competence of evidential matter."

With respect to defining "evidential matter," SAS 31 states that evidential matter consists of both "...the underlying accounting data and all corroborating information..." (AICPA, 1987, Section 326.14) which support the financial statements of an enterprise. Evidential matter consisting of accounting data includes "...the general and subsidiary ledgers, related accounting manuals, and such informal and memorandum records as work sheets, supporting cost allocations, computations, and reconciliations..." (AICPA, 1987, Section 326.14). In addition, evidential matter consisting of corroborating information includes "...documentary material such as checks, invoices, contracts, and minutes of meetings; confirmations and other written representations by knowledgeable people; information obtained by the auditor from inquiry, observation, inspection, and physical examination; and other information developed by, or available to the auditor, which permits him to reach valid conclusions" (AICPA, 1987, Section 326.16).

In addition to defining "evidential matter," SAS 31 also defines the "competence of evidential matter." According to SAS 31, evidential matter, in order to be competent, "...must be both valid and relevant" (AICPA, 1987, Section 326.19). SAS 31 provides three "rules of thumb" to help auditors assess the "validity" of evidential matter (AICPA, 1987, Section 326.19):

When evidential matter can be obtained from independent sources outside an entity, it provides greater assurance of reliability for the purposes of an independent audit than that secured solely within the entity.

When accounting data and financial statements are developed under satisfactory conditions of internal accounting control, there is more assurance about their reliability than when they are developed under unsatisfactory conditions of internal accounting control.

The independent auditor's direct personal knowledge, obtained through physical examination, observation, computation, and inspection, is more persuasive than information obtained indirectly.

The definition of "evidential matter" in SAS 31 appears to be basically adequate. This adequacy is indirectly supported by the fact that similar definitions of "evidential matter" have been used in scholarly research (Hylas and Ashton, 1982; Toba, 1975). Recently, however, Mock and Wright (1982) have complained that the three "rules of thumb" included in SAS 31 provide auditors with insufficient guidance for evaluating evidential matter. These complaints are stated by Mock and Wright (1982, p.4) as follows:

A review of the literature reveals that there is limited published research on evidence evaluation. An AICPA Task Force on audit evidence was formed in 1977 with the charge of providing needed guidance in this area. This effort has resulted in Statement on Auditing Standards No. 31, "Evidential Matter" (September 1980). Unfortunately, this statement focuses on audit assertions and does not address evidence assessment

directly. Thus, the need for improved guidance to evaluate the competence of evidence, as contained in the original Task Force Charge, still needs to be met.

1.2 Research on the Competence of Evidential Matter

In order to verify Mock and Wright's assertion regarding the need for better guidance concerning the competence of evidential matter, an intensive review of the published and unpublished literature on the subject was conducted. This literature review, which is documented in the second chapter, was specifically conducted in order to identify the work which has been performed toward developing objective standards or models for assessing evidential competence. The review of literature revealed that research concerning the evidential competence has encompassed three orientations.

First, the early literature was oriented toward assessing the relative "competence" of specific types of evidential matter. Windal, for instance, attempted to develop standards for assessing the "reliability" of different forms of evidential matter. For example, one of Windal's standards stated that, "Evidence which is obtained from a source independent of the enterprise being audited tends to be more reliable than evidence obtained from a source within the enterprise" (Windal, 1961, p. 395). On the basis of this standard, Windal

rated certain types of evidential matter, such as physical examination and confirmations, as being more "independent" than other types of evidential matter, such as management representations. Stettler (1954), Mautz (1958), and Arens (1970) also authored studies which attempted to develop standards for assessing the competence of specific types of evidential matter. A second orientation was encompassed in much of the literature published in the 1970s. The authors of these studies placed a greater emphasis on developing standards for assessing evidential competence across many audit situations. Two of these studies (American Accounting Association, 1972; Schandl, 1978) attempted to develop such standards on the basis of perceptual concepts adapted from the field of communications. In another study, Kissinger (1974) attempted to formulate standards of competence by combining certain factors which affect the competence of evidential matter, such as "independence" and "objectivity," into more general standards.

In the third stream of literature, Toba (1975) attempted to formulate a model which could be used by auditors to assess the appropriateness of their audit opinions. Toba's model was based on concepts of evidence from the philosophy of science and law as well as certain concepts from economics. After the publication of Toba's model, Kissinger (1977) extended

it to incorporate the principle of "materiality." Thereafter, Stephens (1983) conducted an empirical study which attempted to test the "descriptiveness" of the Toba-Kissinger model. Stephens concluded that the model was too theoretical to accurately predict the type of audit opinion an auditor would render.

1.3 Statement of the Problem

Three conclusions may be reached from this literature review. First, the early studies concerned with the competence of evidential matter identified many of the factors which affect it. These factors include such items as the susceptibility of the evidential matter to fraud; the degree of judgment required to evaluate the evidential matter; the independence (from the client's management) of the entities from which the evidential matter has originated; and other factors. Second, while some work has been performed toward combining these factors into standards which can be used to assess evidential competence across most, if not all, audit situations, the standards developed in the 1970's studies (American Accounting Association, 1972; Kissinger, 1974; Schandl, 1978) were too theoretical to be used in actual audit situations. Finally, the model developed by Toba and Kissinger is too ambiguous to serve as operational

guidance for evaluating evidential competence. Considering these observations, the accounting profession needs to address two issues. First, the profession needs to develop standards which can be used to assess the competence of evidential matter across many audit situations. Secondly, such standards should be combined into a framework or model which can be used as guidance for assessing evidential competence.

1.4 Research Goals and Scope of the Research

In order to address the two issues stated above, this research encompasses two objectives. Regarding the first objective, a normative methodology is used to develop a model of the competence of evidential matter. This model is developed by using concepts of evidence from the philosophy of science and law as a basis for combining certain factors which affect evidential competence, such as the independence of the source of the evidential matter and the susceptibility of the evidential matter to manipulation, into a framework for assessing the competence of evidential matter across a wide variety of audit situations. Regarding the second research objective, the model is tested by applying it to a series of audit failures drawn from recent Accounting Series Releases and Accounting and Auditing Enforcement Releases issued by the Securities and Exchange Commission.

The scope of these objectives is limited in two respects. First, the model is not designed to examine auditors' decision making processes concerning evidential matter: the purpose of the model is to examine evidential matter on an objective basis.¹ This scope limitation means that the model is not designed to measure the persuasiveness or subjective weightings that individual auditors may attribute to specific types of evidential matter. Secondly, no attempt is made to construct a model which examines the factors which affect the "sufficiency" of evidential matter. A substantial amount of research has already been performed on the impact that materiality, internal control, and other factors have on the adequacy of the amount of evidential matter (sample size) that is collected by auditors; the model is concerned solely with the qualitative attributes of evidential matter.

1.5 Limitations of the Study

Testing the model by applying it to audit failures² imposes three limitations on the research. First, the model is tested from a "negative" perspective: little emphasis is placed on determining whether the model adequately simulates the circumstances of a successful audit engagement. Secondly, since the data used for testing the model are prepared by the Securities and

Exchange Commission, the biases of this organization may be embodied in some of the data. Thirdly, while the cases present a wide variety of audit situations, they only allow the model to be tested at the conceptual level. The model is not tested under the circumstances confronted by auditors in an actual engagement.

1.6 The Concepts of Evidential Matter and Evidence

Since the essence of the proposed research is to define a model of the competence of evidential matter, the concepts of evidential matter and evidence, as defined in this study, should be delineated. Evidential matter consists of all of the information recorded in the working papers which the auditor compares against a specific financial statement assertion in order to arrive at a conclusion concerning that assertion.³

Evidence is the objective "support" provided by evidential matter for a financial statement assertion.⁴ For example, the auditor's direct examination of a piece of equipment would provide conclusive evidence in support of a financial statement assertion regarding the existence of the equipment; such physical inspection, however, would not provide conclusive evidence for a financial statement assertion regarding the value of the equipment.

1.7 Organization of the Study

The remainder of this study consists of seven chapters. Chapter 2 presents an overview of the literature concerning the competence of evidential matter. This literature review documents the two problems stated in this chapter. Chapter 3 discusses the methodology used to construct the model. In Chapter 4, concepts of evidence from the philosophy of science are used to construct a foundation for the model. The model is developed and operationalized in Chapters 5 and 6, respectively. In Chapter 7, the model is tested by applying it to a series of audit failures. In the final chapter, the results and contributions of the study are noted, and opportunities for future research and alternative methodologies are discussed.

Endnotes

- 1
A substantial amount of research, such as that of Holstrum and Mock (1985), has already examined evidential matter in terms of auditors' subjective decision-making processes.
- 2
An attempt was initially made to obtain the working papers of actual audits from three audit firms to use as a means for testing the model. Unfortunately, these firms were unable to provide this documentation due to their obligations to protect the confidentiality of their clients.
- 3
"Financial statement assertions" may be defined as "representations by management that are embodied in the financial statement components" (AICPA, 1987, Section 326.05). Examples of financial statement assertions include whether assets exist, whether all the transactions that should be presented in the financial statements are so included, and other representations by management that are embodied in the financial statements.
- 4
An important facet of the definition of evidence in this study is that the support provided by evidential matter for a proposition must be clear and objectively determinable. That is, in order for evidential matter to be considered as evidence, the support provided by the evidential matter for a proposition must be sufficiently clear so that any rational individual would consider the proposition true.

CHAPTER 2
LITERATURE CONCERNING THE
COMPETENCE OF EVIDENTIAL MATTER

2.0 Introduction

Two issues were stated in the previous chapter. The first issue is that more work needs to be performed toward developing a set of standards for assessing the competence of evidential matter. The second issue is that the accounting profession should develop a model for assessing evidential competence. The purpose of this chapter is to document these issues by reviewing the research which has been performed toward developing objective standards or models for assessing the competence of evidential matter.

2.1 The Competence of Specific Types of Evidential
Matter

An examination of the early works dealing with evidential competence (Stettler, 1954; Mautz, 1958; Windal 1961; Arens, 1970) reveals that these authors attempted to assess the relative competence of specific types of evidential matter.¹ Stettler (1954) used his

knowledge of auditing to formulate certain generalizations concerning the relative reliability of physical and documentary evidential matter. In his first generalization, Stettler concluded that, "...since physical contact with an asset would normally constitute more reliable evidence of its existence than would the examination of a document purporting the existence of the asset ... physical evidence will generally be found to have a high degree of reliability" (1954, p.123). Stettler realized, however, that the "reliability" of evidential matter could be affected by the nature of the proposition under consideration. As such, Stettler recognized that, while a cash count would adequately verify the total value of cash and coins on hand, it would not verify the collectibility of checks (1954, p.123). Stettler's second generalization (1954, p.123), which dealt with documentary evidential matter, stated that evidential matter originating and controlled by entities outside the client's organization is more reliable than evidential matter originating and controlled by the client. In his final generalizations, Stettler stated that the books of original entry could, on occasion, serve as evidential matter and that "comparisons and ratios" could also serve as evidential matter (1954, p.125).

Mautz (1958) defined the concept of evidential matter on the basis of the type of audit technique used

to gather it. Mautz outlined nine types of audit techniques which included physical examination, confirmation, examination of documents, recomputation, retracing, scanning, inquiry, examination of subsidiary records, and correlation with related information.

Mautz grouped these audit techniques into three classes of evidential matter which he labelled as "real evidence," "testimonial evidence," and "indirect evidence." First, Mautz defined "real" evidence as evidential matter which "...convincing one of the truth of the proposition to be proved without the necessity of an inference" (1958, p. 43). "Real evidence" included physical examination and count, recomputation, and retracing. Secondly, Mautz defined "testimonial" evidence as that "...obtained through statements from others and requires an inference by the auditor" (1957, p.43). "Testimonial" evidence included confirmations and inquiries by the auditor. Lastly, Mautz defined "indirect" evidence as any evidential matter not falling into the first two categories (1958, p.43). "Indirect" evidence included examination of authoritative documents, scanning, examination of subsidiary records, and correlation with related information.

Regarding his three classes of evidential matter, Mautz stated that "real evidence" was the most reliable, "testimonial evidence" the next most

reliable, and "indirect evidence" the least reliable (1958, p.44). Mautz warned, however, that three "dangers of evidence" would cause auditors not to rely on these generalizations. These "dangers" involved the issues of unwarranted inference, misinterpretation, and conclusiveness.

The first danger, unwarranted inference (1958, p.44), meant that the evidential matter might not be pertinent to the proposition under consideration. To demonstrate the danger of "unwarranted inference," Mautz provided an example of an inexperienced auditor who might believe that a simple mathematical agreement between a control account and a subsidiary ledger would adequately verify the accuracy of the account balance. Mautz pointed out, however, that such an arithmetic agreement would fail to ascertain whether the individual accounts were real, whether the accounts were collectible, or whether the accounts were properly classified.

The second danger, misinterpretation (1958, p.44), meant that the evidential matter itself might be misinterpreted. As an example of misinterpretation, Mautz stated that, "With respect to evidence obtained from other people, the danger of misinterpretation may be twofold: the question ...may be misunderstood by the person asked, and the reply may be misunderstood by the auditor" (1958, p.44).

The third danger, conclusiveness (1958, p.44), meant that the auditor might not be able to reach an absolutely certain conclusion regarding a financial statement assertion. With respect to conclusiveness, Mautz stated that the auditor will frequently doubt "...the extent of contingent liabilities, the adequacy of depreciation rates, and similar matters." (1958, p.45). In The Philosophy of Auditing (Mautz and Sharaf, 1961, p.83), Mautz elaborated on the "danger" of "conclusiveness" by stating that availability of "compelling" evidence would depend, to a great extent, on the nature of the financial statement assertion.² For example, Mautz argued that while "compelling" evidence would be available for assertions involving representations of the existence of physical items, such "compelling" evidence would not be available for assertions involving "value judgements."

After Mautz, Windal (1961) formulated a series of "general" standards designed to aid auditors in determining the "reliability" of various types of evidential matter. These standards included "independence," "objectivity," and "directness." Windal (1962, p. 395) expressed his general standards as follows:

1. Independence

Evidence which is obtained from a source independent of the enterprise being audited tends to be more reliable than evidence obtained from a source within that enterprise.

2. Objectivity

Evidence which is objective in nature tends to be more reliable than evidence which reflects personal judgement or bias.

3. Firsthand

Evidence obtained by the auditor himself or his representative tends to be more reliable than evidence supplied by another, except where the auditor is not qualified to obtain the evidence.

In addition to these general standards, Windal (1961, p.395) developed a series of "special standards of reliability." These "special" standards were limited in scope in that, according to Windal, they could only be applied to specific audit situations. Windal expressed his "special" standards as follows:

1. Evidence based on internal data which have been derived from an accounting system containing adequate internal control tends to be more reliable than evidence based upon data derived from a system without such control.

2. Evidence obtained from outside sources which maintain formal accounting records and/or have a sense of public or personal responsibility tends to be more reliable than evidence obtained from an outside source with inadequate records and/or little or no sense of public or personal responsibility.

3. The examination of items which are relatively more susceptible to fraud tends to give less reliable evidence than the examination of items less susceptible to fraud.

4. In those special situations where the auditor is not qualified to apply a particular technique, the evidence obtained from such application is relatively unreliable.

5. Confirmations which can be handled without effort by the party confirming tend to be less reliable than confirmations which require effort.

Windal finished his article by using his "general" standards to rank the relative reliability of different types of evidential matter. Windal's rankings are shown in Exhibit 2.1 (see page 22). Viewing this exhibit, Windal's general standards appear along the horizontal axis. Various types of evidential matter appear along the vertical axis. Using the legend at the bottom of the model, Windal ranked "correlation with related information" as "partly independent" (B), "partly objective" (B), and "firsthand" (A). Other forms of evidential matter were ranked in a similar manner.

In conclusion, Windal stated that his rankings were only intended to serve as a "...starting point rather than as an analysis of reliability" (Windal, 1961, p.400). Moreover, Windal recognized his ratings would differ between the unique circumstances of audit engagements. Also, Windal realized that, in order for his model to be complete, it would have to incorporate his special standards.

Arens (1970) authored the final of these early articles. Arens combined Windal's "general" and "special" standards into three "general standards." Arens (1970, p.121) expressed his general standards as follows:

1. Independence

Evidence which is obtained from outside the organization being audited is more reliable than evidence obtained from within the organization.

2. Qualification

Evidence obtained from a person who is qualified to give the correct information is more reliable than information obtained from an unqualified person.

3. Judgement

Evidence obtained which requires considerable judgement to determine the correctness of the information is less reliable than evidence which requires little judgement.

On the basis of these general standards, Arens constructed a modified version of Windal's table. This table, which is shown in Exhibit 2.2 (see page 23), differed from Windal's table in three respects. First, as shown by the legend at the bottom of the exhibit, Arens based his rankings on the degree of "directness" associated with the method used to gather the evidential matter. Secondly, Arens's "independence" and "judgement" standards were similar to Windal's "independence" and "objective" standards; however, Arens's "qualification" standard had been represented by Windal as being a "special" standard. Thirdly, Arens used a modified version of Mautz's (1958) classification system of evidential matter (physical evidence, testimonial evidence, and indirect evidence) while Windal did not use such a classification system.

	General Standard 1 Independence	General Standard 2 Objective	General Standard 3 First Hand
Physical Examination	A	A	A
Confirmation	A	A	C
Examination of Documents	B	A	A
Recomputation	B	A	A
Retracing	C	A	A
Correlation with Related Information	B	B	A
Examination of Subsidiary Records	C	B	A
Scanning	C	C	A
Inquiry	C	B	C

Legend

- A- independent, objective, or first hand
- B- partly independent, objective, or first hand
- C- not independent, objective, or first hand

**Exhibit 2.1: Windal's Table of the
Reliability of Evidence**

	Independence	Qualifications	Judgment
Real Evidence			
Physical Examination	A	A	A-B
Recomputation	A	A	A
Testimonial Evidence			
Statements by Third Parties	B	A-C	A-C
Statements by Officers and Employees	D	A-C	A-C
Documentary Evidence			
Originating Outside the Organization	C	A-B	A-B
Originating Inside the Organization	D	A-B	A-B
Other			
Calculation and Correlation	A	A	C
Subsidiary or Detailed Record	D	A-B	A-B

A- Obtained directly by the auditor
 B- Obtained directly from a third party by the auditor
 C- Obtained from the client but originally prepared by a third party
 D- Obtained from the client and prepared by the client

Exhibit 2.2: Arens's Table of the Reliability of Evidence

2.11 Summary of the Early Studies

Kissinger, in a review of these early studies (1974), concluded that their most important contribution was the identification of "...the factors most relevant to the evaluation of evidential reliability" (1974, p.89). However, while Kissinger concluded they had identified many of the factors affecting the "reliability of evidential matter," he stated that these studies had failed to devise a method for combining the individual factors into an overall "...measure of evidential reliability" (1974, p.89).

Two observations concerning these early studies support Kissinger's assertion. First, as admitted by Windal, many of the standards developed in these studies were difficult to apply on a consistent basis. Windal's special standards, for example, were only applicable to very unique situations. Secondly, a standard which one author considered "general" was considered "special" by another author. This inconsistency is exemplified by the difference in treatment of "qualifications" by Windal and Arens.

2.2 The 1970's Studies

While the studies published in the 1950s and 1960s concentrated on measuring the relative competence of

specific types of evidential matter, many studies published in the 1970s placed more emphasis on developing standards for assessing the competence of evidential matter across a wide variety of audit situations. In The Philosophy of Auditing, Mautz and Sharaf (1961, p.74) had already stated that auditing, like other professions, should develop such rules:

Mature and well-developed disciplines have standards for the collection and evaluation of evidence. These may be so common as to be accepted without specific statement, or they may be given formal expression.

In order to stress the importance of such standards to professions other than auditing, Mautz and Sharaf discussed two rules used by historians to assess the "authority" of evidential matter. The first rule was that "...the proof of the genuineness of the document examined by the historian does not prove that it tells the truth" (1961, p.108). The second rule was that "...in dealing with materials of history, the personality of the author is a constant factor to be dealt with" (1961, p.108).

In a direct response to Mautz and Sharaf's call to develop standards of competence, the American Accounting Association (1972), through its Committee on Basic Auditing Concepts, attempted to formulate a set of standards for assessing the competence of evidential matter. This attempt was written in A Statement of

Basic Auditing Concepts (ASOBAC). Regarding evidential matter, the committee's basic objective was "...to explore the theoretical foundation and the methodology of collecting and evaluating audit evidence" (1972, p.17).

The committee chose to accomplish this objective by examining the perceptual capabilities of the individuals gathering and evaluating the evidential matter. The authors of ASOBAC viewed "errors in observation" as being the principal cause of errors in evidence evaluation. The discussion in ASOBAC stated that "errors in observation" could be minimized if the observations (evidential matter) gathered by the auditor satisfied the criterion of "intersubjectivity" (1972, p.45). "Intersubjectivity" meant that two individuals observing the same evidential matter at different points in time would formulate similar conclusions concerning the validity of the evidential matter and the support provided by the evidential matter for the financial statement assertion.

ASOBAC (1972, pp. 456-58) identified six reasons which would cause evidential matter to fail the test of "intersubjectivity." These reasons included:

1. Ignorance on the part of the auditor.
2. Personal bias on the part of the auditor.
3. The inability of the auditor to adapt to the circumstances of the engagement due to an overreliance on his "tools" (such as audit program).

4. A contamination of evidential matter by the auditor caused by the auditor's presence at the site of the client.
5. The inability of the auditor to interpret the perceptions of others (indirect evidence).
6. The inability of the original observer of an accounting transaction to communicate the original transaction or commit the original transaction to memory.

The Committee on Basic Auditing Concepts, in its final discussion on evidential matter, cited two mechanisms (1972, p.48) which could be used to enhance "intersubjectivity" and minimize "errors in observation." First, the committee stated that "errors in observation" could be minimized by "insulating" the auditor from the client. This "insulation" could be accomplished through audit committees, binding contracts between the auditor and the client, and regulatory action requiring the client to disclose the reasons for changing auditors. Secondly, the committee stated that "errors in observation" could be eliminated by having different auditors perform the same audit procedure at different points in time.

After ASOBAC, Kissinger (1974) attempted to formulate a set of standards for assessing evidential competence by utilizing two of Mautz's (1958) "dangers" (misinterpretation and conclusiveness) as a basis for combining certain factors which affect the competence of evidential matter into more general standards. Kissinger identified these factors from the early studies (discussed in the previous section).

First, Kissinger listed factors which affect the auditor's possibility of misinterpreting a particular type of evidential matter (1974, p.89). These factors included:

1. the degree of judgment required for interpretation of the evidence, and;
2. the qualifications of the one interpreting the evidence.

Secondly, Kissinger listed factors which affect the auditor's evaluation of the conclusiveness of a particular type of evidential matter (1974, p.90).

These factors included:

1. the degree of inference required to establish a relationship between the evidence and the proposition in question, and;
2. the possibility that the evidence may be intentionally misleading, itself, a function of:
 - a. the independence of the evidence from the client's control;
 - b. the general susceptibility of the particular type of evidence to suppression, manipulation, alteration, or counterfeiting;
 - c. aspects of the client's internal controls which may affect the likelihood of motivation for such tampering with the particular type of evidence, and;
 - d. the quality of the evidential source with respect to responsibility and integrity extent of bias of self-interest.
3. the possibility that the evidence may be unintentionally misleading, itself, a function of:
 - a. the qualifications of the evidential source (knowledge), and;

- b. the qualifications of the one gathering the evidence.

In addition to formulating these groups of factors, Kissinger discussed two other factors. The first of these factors, timeliness, was defined as "...the extent to which reality at the time an auditor obtains evidential matter reflects reality at the time of the auditor's opinion date" (1974, p.94). The second of these factors, "corroborating evidence," emphasized that the support or contradiction provided by a set of evidential matter for a financial statement assertion would increase as the number of types of evidential matter increased:

When the auditor's evidential collection contains more than one type of evidence relevant to a particular financial statement assertion, the support which all of these types provide, in combination, for an opinion on that assertion may differ significantly from the sum of the support which each type would provide individually. This possibility exists because, in addition to supporting an opinion on an assertion, each individual type of evidence may also affect the reliability of one or more of the other types, i.e., types which corroborate one another will tend to increase each other's reliability while types which conflict with one another will tend to decrease each other's reliability (1974, p.101).

After Kissinger, Schandl (1978) authored the last of the 1970's studies. Schandl used the concepts of "principals" and "surrogates" in his theory of evidence. Schandl cited Ijiri (1967) in order to define these concepts. Ijiri had defined "principals" as the

actual phenomena being explored and a surrogate as "...things or phenomenon that are used to represent..." (1967, p.4) the principal. As a basic example of surrogates and principals, Ijiri had stated that a map would act as a surrogate for the earth's surface (the principal) (1966, p.5).

Schandl identified four "obstacles" which the auditor would encounter if the proper surrogates were not utilized to represent the principal (1978, p.134).

These obstacles were:

1. Data may not be perceived by the auditor.
2. Data may be perceived incorrectly.
3. Data may be incorrectly interpreted.
4. Data incorrectly interpreted may result in incorrect inferences.

Schandl stated that these obstacles could be overcome if the "surrogates" satisfied five axioms. These axioms, which were labelled as the "principles of evidence" (1978, p.204), included:

1. The principle of availability.
2. The principle of independence.
3. The principle of directness.
4. The principle of confirmation.
5. The principle of bias.

The first principle, availability, (1978, p.204) stated that sufficient evidential matter was needed in order to properly evaluate a proposition. The second principle, independence, stated that the auditor, when evaluating evidential matter, should be "...free from

influence, guidance, or control of another or other..." (1978, p. 204).

The third principle, directness, dealt with the "distance" of the "surrogate" from the "principal." Schandl used the example of a building owned by the client to demonstrate the concept of "distance" (1978, p.207). According to Schandl, if the client purchased the building, the auditor could use the sales invoice as a surrogate for the original cost of the building. However, if the client constructed the building, the auditor would have to examine numerous surrogates at different levels of generalization. For example, at the transactions level, the auditor would have to examine vouchers for direct materials, direct labor, and manufacturing overhead. At a more general level, the auditor would have to examine the basis for overhead allocation. Schandl concluded that the evidential matter in the latter situation was less "direct" than the evidential matter in the first situation because "...the possibility of errors..." (1978, p.208) would be increased due to the greater distance (level of generality) of the surrogates.

Schandl's fourth axiom, confirmation, stated that, "...surrogates from a single source are less reliable than surrogates that originate from different sources and each confirm each other" (1978, p.208). Moreover, Schandl stated that, "By reconciling the surrogates,

the auditor can confirm them, or he can detect irreconcilable differences (clues) that have to be verified through further investigation" (1978, p.209). Schandl's final principle, bias, addressed the effects of relative risk on the collection of evidential matter. This principle stated that "...in the evaluation of surrogates, and in the evaluation of the array of surrogates, we shall take into consideration the potential damages that we could suffer or cause others to suffer" (1978, p.210).

2.21 Summary of the 1970's Research

As shown in this section, certain studies published in the 1970s concentrated on developing standards for assessing the competence of evidential matter across a wide variety of audit situations. Each of these studies took a different approach toward developing such standards. First, ASOBAC based its standards of competence on the perceptual capabilities of the individuals gathering and evaluating the evidential matter. Secondly, Kissinger (1974) attempted to combine certain of the factors which affect the competence of evidential matter into groupings based on Mautz's three "dangers" of evidence. Finally, Schandl developed five "principles of evidence" based on the concepts of "principals" and "surrogates."

Unfortunately, the theoretical emphasis of ASOBAC and Schandl's study and the lack of empirical support for all of this research meant that these works could not serve as operational models for assessing the competence of evidential matter. However, even with this lack of empirical support, each of these studies made a specific contribution toward understanding the qualitative aspects of evidential matter. First, in ASOBAC, the concept of "intersubjectivity" raised the possibility that the quality of evidential matter could be enhanced if two individuals with auditing expertise agreed on the validity and conclusiveness of the evidential matter. Secondly, Kissinger raised the possibility that consistent standards for assessing the evidential competence could be formulated by combining certain of the factors which affect the competence of evidential matter. Finally, Schandl's use of "principals" and "surrogates" emphasized that the validity of evidential matter could be determined by examining the accuracy with which the evidential matter represented an empirical entity or event.

2.3 The Toba-Kissinger Framework

As the 1970s ended, the Auditing Standards Board recognized the importance of evidential matter in auditing by issuing Statement on Auditing Standards

Number 31 ("Evidential Matter"). The purpose of this statement was to support the requirement imposed on auditors by the third standard of field work of obtaining "sufficient, competent evidential matter" in support of an audit opinion. However, even with this official requirement, very little research had been performed toward developing a model to represent the support provided by a set of evidential matter for an auditor's conclusions concerning a set of financial statements.

In 1975, Toba presented the only major attempt in the research literature to derive an objective model for evaluating the evidential support needed by auditors to formulate specific conclusions concerning a set of financial statements.⁴ Toba developed this model by borrowing concepts of evidence from the philosophy of science and law. The first portion of Toba's study developed the definitions for the model.

2.31 Toba's Definitions

Toba first defined "evidential matter" and "evidence." Toba defined evidential matter as "...the stuff of which facts or assertions are constructed or perceived. Evidential matter is a surrogate of facts or assertions" (1975, p.9). Additionally, evidence was defined as "...the basis on which one ought to fashion

one's beliefs or draw some conclusion with respect to the proposition established" (1975, p.9).

Toba separated the concept of evidence into the categories of "confirming" evidence and "supporting" evidence. "Confirming" evidence was defined as "...the means by which an ultimate proposition is established" (1975, p.9). In probabilistic terms, "confirming"⁵ evidence was expressed as:

statement q may be said to have confirming power for statement p, if statement q is well established and renders p more probable than not p (expressed as p) (1975, p.9).

In addition to "confirming" evidence, Toba defined⁶ "supporting" evidence as:

statement q may be said to have supporting power for statement p if the probability $P(p/q)$ is greater than the absolute or prior probability statement of p (1975, p.9).

In addition to the concepts of evidential matter and evidence, Toba defined two types of "propositions" which he labelled as "elementary" and "general" propositions. First, an "elementary" proposition was defined as a sentence which "...symbolizes a proposition of fact..." and which "...always includes a proper name or descriptive fact which uniquely designates some particular or individuality" (1975, p.10). Toba used the statement, "One hundred units of inventory were shipped to a company in New York this

November" (1975, p.10) to exemplify an "elementary proposition." Secondly, "general propositions" were defined as sentences which "...do not report matters of fact" (1975, p.10). Toba used the sentence, "The financial statements present fairly the financial position and results of operations" (1975, p.10) to exemplify a "general proposition" in auditing.

2.32 Toba's Basic Model

Toba used his concepts of evidential matter, evidence, and propositions to formulate his model. As the basic tenet of the model, Toba stated that all audits entail one "ultimate" (general) proposition (proposition "X"), which he expressed as:

Proposition "X"

The financial statements present fairly the financial position and results of operations of a company under examination (1975, p.14).

According to Toba, the type of audit opinion that an auditor would render on proposition "X" would be determined by two "elementary" propositions. The first of these propositions, which was labelled as proposition "Y," was concerned with the degree of conformity of the client's accounting practices with Generally Accepted Accounting Principles (GAAP). This proposition was expressed as:

Proposition "Y"-Conformity with GAAP
Accounting policy of the company under review is made in conformity with Generally Accepted Accounting Principles (1975, p.14).

The second of the "elementary" propositions, which Toba labelled as proposition "Z," was concerned with the auditor's evaluation regarding the quality of the client's internal control. This proposition was stated as:

Proposition "Z"-Internal Control
A system of internal control (particularly a system of internal accounting control) is in accordance with reasonable standards established within a company (1975, p.14).

Toba combined these three propositions into a basic model of evidence. This model is shown in Exhibit 2.3 (see page 38). According to the model, the "conjunction" of propositions Y and Z would constitute "confirming" evidence for the "ultimate" proposition X. Consequently, as shown in Exhibit 2.3, if both of the elementary propositions Y and Z were supported by the evidential matter, the auditor would issue a "clean" opinion on the financial statements. In this situation, according to Toba's definition of "confirming" evidence, the probability of the ultimate proposition's (proposition X) truth would be greater than 50% (thereby constituting "confirming" evidence for the proposition). From an opposite perspective, if neither of the "elementary" propositions was supported by the evidential matter, the "ultimate" proposition would not

		Proposition Z Internal Control	
		Supported	Not Sufficiently Supported
Proposition Y GAAP	Supported	A Clean Opinion	A Qualified Opinion or a Disclaimer
	Not Sufficiently Supported	A Qualified Opinion or an Adverse Opinion	An Adverse Opinion

Exhibit 2.3: Toba's Basic Model

be "confirmed"; that is, the probability that the ultimate proposition was true would be less than 50%. Hence, an adverse opinion would be issued. Finally, if only one of the "elementary" propositions (Y or Z) was supported by evidential matter, that proposition would constitute "supporting evidence" for the "ultimate proposition (X). Consequently, as shown in Exhibit 2.3, support for only one of the elementary propositions alone would result in a qualified opinion, an adverse opinion, or a disclaimer.

2.33 The Weight of Evidence

Toba, in his discussion concerning his two "elementary propositions," admitted that propositions Y and Z were really both "...general propositions which cannot be directly proved. Hence they must be rephrased in terms of elementary propositions in order that auditors may prove them directly" (1975, p.15). So, for example, proposition Y (regarding the client's conformity with GAAP) could be proved only by verifying such "true" elementary propositions as, "The inventory is valued at cost, on a first-in first-out basis" and "The plant and equipment is valued at cost and is consistently depreciated" (1975, p.10).

In order to explain how the "true" elementary propositions would enable the auditor to form an

opinion concerning either of propositions Y or Z, Toba invoked the legal concept of the "weight of evidence." According to Toba, as the auditor evaluated the true "elementary propositions," he would attach a given "weight" to each one. Consequently, with the verification of each additional "elementary proposition" ("supporting evidence"), the auditor would be accumulating a total body of evidence (with a total weight) in favor of either proposition Y or Z. Finally, if the weight of the total body of evidence constituted a preponderance of evidence (greater than 50%), the auditor would find "confirming evidence" for either proposition Y or Z.

2.34 Kissinger's Extensions

Kissinger (1977) reviewed Toba's model and modified it in two respects. First, Kissinger extended the number of "general" propositions from one to twelve. Secondly, Kissinger injected "materiality" into Toba's framework. In his final discussion concerning the model, Kissinger argued with Toba's assertion that auditors would issue an unqualified ("clean") opinion on a set of financial statements if the total "weight" of evidence enabled the auditor to conclude that there was only a greater than 50% probability (a preponderance) that the "ultimate" proposition (proposition X) was true.

2.35 Summary of the Toba-Kissinger Framework

Stephens (1983), in an attempt to test the descriptiveness of the Toba-Kissinger framework, administered a study which required auditors to formulate opinions concerning hypothetical audit engagement situations. After comparing the auditors' opinions with the opinions predicted by the model, Stephens concluded that there was a substantial nonconformance of the subject auditors' responses with the audit opinions predicted by the Toba Kissinger Model. In addition, Mock and Wright (1982) criticized the Toba-Kissinger model as being too "broad" to be operational.

In spite of these criticisms, Toba, Kissinger, and Stephens made certain contributions to the literature. First, these authors formulated a theoretical foundation with the potential for serving as a basis for future research. Furthermore, Toba and Kissinger raised the possibility that legal concepts of evidence could be adapted to an auditing context. Finally, Stephens performed the first attempt at empirically testing a theory of audit evidence.

2.4 Conclusion

This chapter has presented an overview of the research that has been performed toward developing

standards and models for evaluating the competence of evidential matter. The following observations concerning this body of literature should be emphasized. First, the early studies dealing with the competence of evidential matter identified many of the factors which affect it.⁷ These factors, which may be stated in a manner which indicates that the presence of the factor in an audit enhances the competence of evidential matter, include the following:

Directness (DIR)

The evidential matter has been collected on a "firsthand" basis by the auditor or his representative.

Firmness (FIRM)

The evidential matter is not susceptible to manipulation, alteration, or counterfeiting.

⁸
Audit Control (AC)

The auditor has maintained control over the evidential matter without interference from the client.

Independence (IND)

The evidential matter has originated and is controlled by a source which is not under the influence of the client's management.

Integrity (INT)

The evidential matter has originated and is controlled by a source that possesses professional integrity.

Objectivity (OBJ)

The evaluation of the evidential matter does not require a subjective judgement.

Qualifications (QUAL)

If the evaluation of the evidential matter requires a subjective judgement, the evidential matter is evaluated by an individual who is technically qualified to do so.

Internal Control (IC)

The evidential matter has originated from an organization with adequate internal controls.

In addition to these factors, Kissinger identified the factors of timeliness and corroborating evidence. These factors may be stated as follows:

Timeliness (TIM)

The evidential matter has been gathered at or near the financial statement date.

Corroborating Evidence (CORR)

The auditor has gathered more than one type of evidential matter which supports or contradicts the financial statement assertion.

Two problems, however, were not addressed by these early studies. The first problem is that the factors which affect the competence of evidential matter were difficult to apply on a consistent basis. The second problem is that these studies failed to provide a framework or model for assessing evidential competence.

Research performed in later years attempted to address these problems; however, this research was incomplete. The works dedicated toward developing consistent standards for evaluating the competence of evidential matter were too theoretical to serve as

operational guidelines. Furthermore, Toba attempted to formulate a model which could be used to assess the appropriateness of auditors' opinions; however, as demonstrated by Stephens, the model failed to serve as an accurate predictor of audit opinions. The next chapter discusses a methodology for addressing these problems.

Endnotes

1 In these early studies, the term "evidence" was used in reference to both the physical matter inspected by the auditor and the support provided by the physical matter for a financial statement assertion.

2 In each of these works, Mautz used the words "conclusive" and "compelling" in reference to the degree of persuasiveness associated with a specific set of evidential matter.

3 While ASOBAC implied that "errors in observation" is the inability of an individual to make objective observations, it did not explicitly define "errors in observation."

4 While recent studies have attempted to develop models which examine auditors' decision-making processes in evidence evaluation, very little research has been performed to developing a model which examines the objective characteristics of evidential matter.

5 Regarding "confirming evidence," Toba was stating that a piece of evidential matter (q) could be considered "confirming evidence" for a proposition (p) if, after considering the evidential matter (q), the probability that the proposition (p) was true exceeded 50% (was "more probable than not").

6 Regarding "supporting evidence," Toba was stating that a piece of evidential matter (q) could be defined as "supporting evidence" for a proposition (p) if, after considering the evidential matter (q), the probability that the proposition was true had increased.

7 The factors which affect the competence of evidential matter may include characteristics of the evidential matter, such as firmness (FIRM); the source of the evidential matter, such as independence (IND); or the individual evaluating the evidential matter, such as qualifications (QUAL).

8 While this factor was not explicitly stated in any of the early studies, it was implied in Windal's fifth "special" standard which stated that confirmations are more reliable if they are not handled by third parties.

CHAPTER 3

METHODOLOGY

3.0 Introduction

The preceding chapter discussed the research which has been performed toward achieving a better understanding of the competence of evidential matter. Two shortcomings were found in the literature. First, while the early literature identified many factors which affect the competence of specific types of evidential matter, these factors were never defined in a manner which would permit them to be applied across many audit situations. Secondly, the models developed in the literature were too theoretical to be used in actual audit situations.

In order to address these shortcomings, two research objectives were stated in Chapter 1. The first objective entails formulating a model which can be used as objective guidance for evaluating the competence of evidential matter.¹ The second objective entails testing the model by applying it to a series of actual audit failures. This chapter discusses the methodology used in the study.

3.1 Overview of the Methodology

In general, a normative methodology, somewhat similar to that of Toba, is used to develop the model. An overview of the methodology is shown in Exhibit 3.1 (see page 48). The starting point for building the model is a thorough review of concepts of evidence from the philosophy of science. This review, which is contained in Chapter 4, is used to develop a conceptual foundation for the model which is more comprehensive than Toba's framework. In Chapter 5, legal concepts of evidence are used to apply the factors which affect the competence of evidential matter, as listed in Chapter 2, to the model's philosophical foundation. Legal concepts of evidence have been chosen for this purpose because the law profession has extensive experience in applying theoretical aspects of evidence to an actual decision making process (adjudication). In Chapter 6, the model is operationalized on the basis of Statements on Auditing Standards or deductive logic. After the model is operationalized, it is tested in Chapter 7 by applying it to the a series of audit failures. The steps of the research methodology are now discussed in more detail.

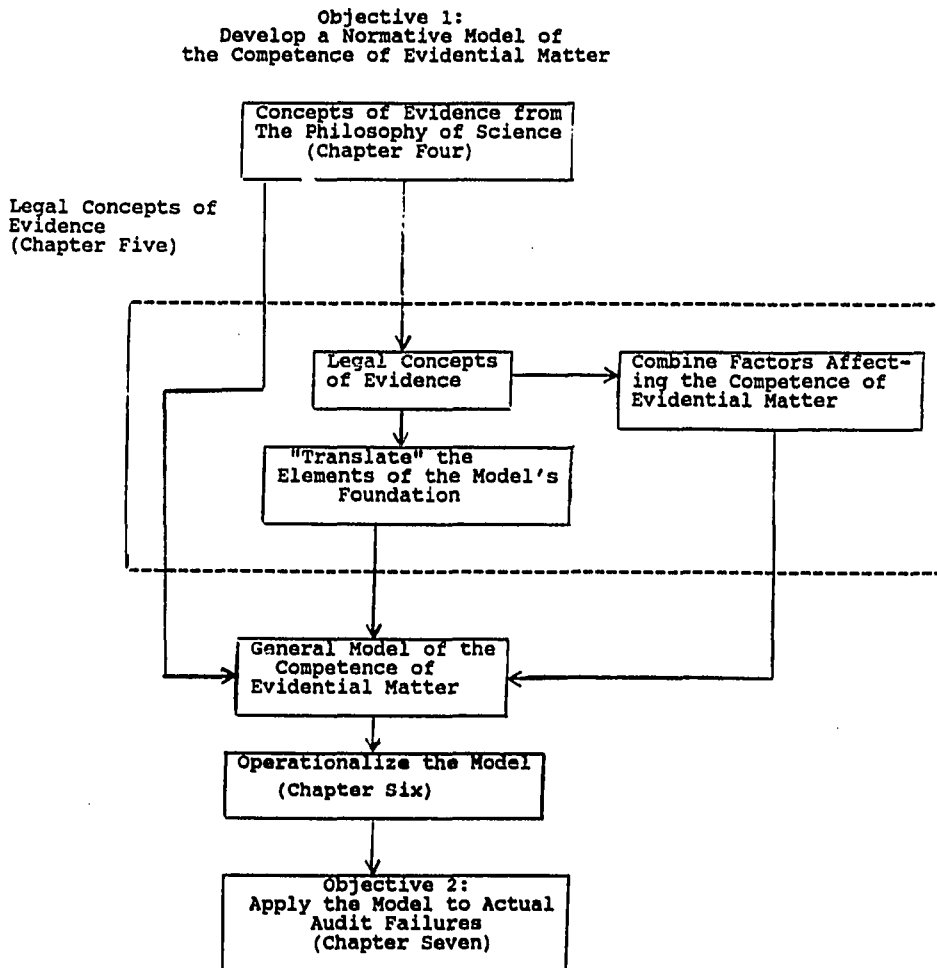


Exhibit 3.1: Procedures in the Research Study

3.2 Concepts of Evidence from the Philosophy of Science

The starting point for building the model is a review of concepts of evidence that have been espoused by philosophers of science. This literature review, which is documented in Chapter 4, includes three discussions. The first, based on Hempel's (1965) "Studies in the Logic of Confirmation," identifies the basic elements of "confirmation."² The second, also based on "Studies in the Logic of Confirmation", describes how Hempel combined his elements of confirmation into three basic steps for confirming a hypothesis. Eventually, these steps constitute the model's foundation.

In the third discussion, four views of confirmation are described. They are the inductive, deductive, retroductive, and hybrid definitions of evidence. Inductivists argue that repetitions of evidential matter are the primary support provided by evidential matter for a hypothesis. More specifically, inductivists examine the affect that such repetitions of evidential matter have on the probability that a hypothesis is correct. The works discussing inductivism include Logical Foundations of Probability (Carnap, 1950) and The Foundations of Scientific Inference (Salmon, 1966).

The second type of evidence discussed is deductivism. The "purest" form of deductive evidence,

which is known as "hypothetico-deductivism," considers whether a hypothesis accurately "explains" the existence or occurrence of evidential matter. Works on deductive concepts of evidence include Patterns of Discovery (N.R. Hanson, 1965) and The Structure of a Scientific System (Braithwaite, 1959).

A third type of confirmation is retroductive evidence. Like inductivists, retroductivists consider the process of confirmation as commencing with the evidential matter and ending with the hypothesis. While inductivists attempt to confirm a hypothesis on the basis of repetitions of the evidential matter, retroductivists consider whether an instance of evidential matter would be "explained" if the hypothesis were correct. Retroductivism is described in Patterns of Discovery (Hanson, 1965).

The final form of evidence described is a "hybrid" type of confirmation. This approach to confirmation has been formulated by Peter Achinstein in "Concepts of Evidence" (1983a, pp.145-173) and The Nature of Explanation (1983b). Specifically, Achinstein has developed a set of standards for confirmation which embody aspects of the inductive, deductive, and retroductive views of evidence. On the basis of the various types of evidence, a foundation for the model is proposed. This foundation is developed by using Hempel's process of confirmation (from the first and

second discussions) as a basis for combining certain facets of confirmation (from the third discussion) into a model.

3.3 Legal Concepts of Evidence

The next step in the research process, contained in Chapter 5, is to apply legal concepts of evidence to the model's philosophical foundation. This step is represented in Exhibit 3.1 by the region labelled as "Legal Concepts of Evidence." The node labelled as "Concepts of Evidence from the Philosophy of Science" is connected with two nodes. The first node is labelled as "General Model of the Competence of Evidential Matter." The second node is labelled as "Legal Concepts of Evidence."

The line which directly connects "Concepts of Evidence from the Philosophy of Science" and "The General Model of the Competence of Evidential Matter" symbolizes that, in certain instances, elements of the model's foundation are directly used to develop the model. For instance, a "hypothesis" in science is analogous to a "financial statement assertion" in accounting.

In addition to such direct application, "Concepts of Evidence from Law" are used in two ways to develop the model. First, legal concepts of evidence are used

to "translate" the philosophical concepts of evidence embodied in the model's foundation into operational form. Secondly, legal concepts of evidence are used to combine the factors which affect the competence of evidential matter into standards which can be used to assess the evidential competence across many audit situations.

An example of how legal concepts of evidence are used to "translate" the philosophical concepts of evidence (embodied in the model's foundation) may be provided by considering the philosophical concept of "absolute" confirmation. This concept is expressed by Carnap (1962, p.xvi) as, " $c(h,e) > b$." This expression may be read as, "The hypothesis (h) is confirmed (in the absolute sense) by evidential matter (e) to a degree greater than b, where b is some chosen number, presumably close to 1." More specifically, the hypothesis (h) is "absolutely confirmed" by the evidential matter (e) because the probability of the hypothesis (h), considering the evidential matter (e), is close to 100%.

While this definition of "absolute confirmation" may be quite methodical, the same concept is expressed at a more practical level by considering the legal definition of "conclusive evidence." In law, "conclusive" is defined as:

Shutting up a matter; shutting out all further evidence; not admitting of explanation or contradiction; putting an end to inquiry (Black, 1979, p.263).

Furthermore, "conclusive evidence" is defined in law as:

...that which is incontrovertible, either because the law does not permit it to be contradicted, or because it is so strong and convincing as to overbear all proof to the contrary and establish the proposition in question beyond any reasonable doubt (Black, 1979, p. 263).

Both the philosophical concept of "absolute" confirmation and the legal concept of "conclusive evidence" express the idea that the evidence for a proposition may be so strong that the proposition is irrefutable. However, the legal concept of conclusive evidence is expressed in a more forceful and explicit manner; such a definition of irrefutability, therefore, facilitates the application of "absolute confirmation" to a practical level.

In addition to using legal concepts of evidence to "translate" the elements of the model's foundation, they are also used to combine the factors affecting the competence of evidential matter into more consistent standards. Legal "rules of evidence" are used for this purpose. ³ An example of this procedure may be provided by considering the concept of "impeachment." Impeachment is concerned with the credibility of a witness (the source of the evidential matter).

One method for impeaching a witness is to demonstrate that the witness's close relationship with one of the litigating parties has caused the witness to be biased. Another method for impeaching a witness is to demonstrate that the witness's "bad character" means that the witness is not trustworthy. Using these rules of impeachment, a standard for assessing the competence of evidential matter may be formulated by combining certain of the factors which affect the competence of evidential matter (as listed in Chapter 2) into more general standards. For example, in an auditing context, if the factor of independence (IND) is not present, the evidential matter may be "impeached" on the grounds that it is biased. Secondly, if the source of the evidential matter does not possess integrity (INT), the evidential matter may be impeached on the grounds that it has originated from a source with "bad character."

3.4 Operationalizing the Model

In Chapter 6, the model is operationalized on the basis of Statements on Auditing Standards that have been promulgated by the Auditing Standards Board. For example, the factor of qualifications (QUAL from Chapter 2), which considers whether the evaluator of evidential matter is technically qualified to do so, may be operationalized by referring to Section 336 of

the Codified Statements on Auditing Standards ("Using the Work of a Specialist"). This section of the standards provides guidelines for determining whether an individual is qualified to provide a technical opinion to the auditor.

If Statements on Auditing Standards do not provide sufficient bases for operationalizing the model, two other methods are used. First, other authoritative pronouncements in accounting, such as pronouncements by the Securities and Exchange Commission, are used to operationalize the model. For example, the factor of independence (IND) may be defined by referring to the SEC's rules and decisions concerning auditor independence. Secondly, deductive logic is used to define certain elements of the model. For example, the early literature has stated that errors related to audit controls (AC) are usually caused by the auditor's loss of physical control over the evidential matter; however, the auditor may also lose control over the evidential matter if he permits the client to influence the scope or type of evidential matter gathered.

3.5 Testing the Model

After the model is operationalized, it is tested by applying it a series of actual audit failures. This test, which is described in Chapter 7, is accomplished

by applying the model to recent Accounting Series Releases and Accounting and Auditing Enforcement Releases that have been issued by the Securities and Exchange Commission. The purpose of applying the model to the audit failures is twofold. First, this procedure is used to examine whether the elements of the model can be applied to the large number of audit situations presented by the audit failures. Secondly, the cases are used to examine the internal consistency of the model.

3.6 Validity Considerations

The validity of any study is both internal and external in nature. Internal validity has three important aspects. These aspects are construct validity, content validity, and criterion validity. Construct validity is concerned with whether a construct describes or measures what it is supposed to describe or measure. Two facets of construct validity are "convergence" and "discriminality". Convergence examines whether "...evidence from different sources gathered in different ways all indicates the same or similar meaning of the construct." (Kerlinger, 1973, 462). Discriminality examines whether "...one can empirically differentiate the construct from other constructs that may be similar, and that one can point

out what is unrelated to the construct" (Kerlinger, 1973, p.463).

The primary method for obtaining construct validity lies in the normative part of the study. If the elements of the model are solidly "grounded" in the philosophical and legal concepts of evidence, there should be definite uniquenesses to their meanings. A secondary "check" for construct validity lies in the application of the model to the actual audit failures. In applying the model to these audit cases, it is applied to a variety audit situations; therefore, if the model's elements can be clearly applied to most of these situations, it should possess a certain amount of construct validity.

The second facet of internal validity is content validity. Content validity is concerned with whether a measure is "...representative of the content or the universe of content of the property being measured" (Kerlinger, 1973, p. 458). According to Kerlinger (1973, p. 458), the validation of content is essentially judgemental. Consequently, one method for analyzing content validity is to ascertain whether a qualified individual (such as an experienced auditor) would arrive at conclusions similar to those of the researcher. In this research, content validity is enhanced by operationalizing the model on the basis of Statements on Auditing Standards. These pronouncements

have been developed over many years by the accounting profession; therefore, since the details of the model are based on these standards, they are defined on the basis of criteria which have been accepted by the accounting profession.

The final facet of internal validity is criterion validity. Criterion validity is concerned with whether a model accurately predicts an outcome. As in the case of construct validity, the primary method for achieving content validity lies in the normative portion of the study. If the model is solidly grounded in concepts of evidence from the philosophy of science, it should be capable of predicting whether evidential matter is "competent." A secondary mechanism for achieving criterion validity is the application of the model to actual audit failures; if the model might have prevented the failure from occurring, it should possess a certain amount of criterion validity.

In addition to internal validity, a study should possess the requisite external validity. Krathwol (1985, p.71) states that a study possesses external validity if the study produces "...the same results under varying circumstances, with a variety of subjects, with different operators, when observed with different relevant instruments, and at different times." In this study, the principal method for obtaining external validity lies in the variety of

audit failures examined. If the model is applicable to these audit failures, it should be generalizable, at the conceptual level, to different audit situations.

3.7 Conclusion

This chapter has provided a summary of the methodology used in this study. In general, a normative methodology is used to accomplish the research objectives. In order to fulfill the first objective, concepts of evidence from the philosophy of science and law are used to develop a model of the competence of evidential matter. In order to fulfill the second objective, the model is tested by applying it to a series of actual audit failures. The next chapter commences the discussion of concepts of evidence from the philosophy of science.

Endnotes

1

During the study, certain factors which affect the competence of evidential matter which have not been identified by the authors of the early studies may be uncovered. If such additional factors are discovered, they will be added to the list of factors shown at the end of Chapter 2 and incorporated in the model.

2

In "Studies in the Logic of Confirmation," Hempel uses the word "confirm" to describe the support provided for a hypothesis by a set of evidential matter. Therefore, within the context of this work, the word "confirm" is analogous to the definition of "evidence" as described at the end of Chapter 1. The process of confirmation entails comparing a hypothesis with evidential matter and arriving at a conclusion concerning the truth of the hypothesis.

3

Legal "Rules of Evidence" are rules used by courts of law to determine if evidential matter is admissible toward the determination of a verdict. The nature of "Rules of Evidence" is discussed in Chapter 5.

CHAPTER 4
CONCEPTS OF EVIDENCE

4.0 Introduction

The purpose of reviewing philosophical concepts of evidence is to construct a comprehensive foundation for the model. This review encompasses three discussions. In the first discussion, the basic elements of the model are described. In the second discussion, the procedures of the model are developed. Subsequently, in the third discussion, various concepts of evidence advocated by philosophers of science are described and are used to finalize the model's foundation.

4.1 Discussion 1: The Elements of Confirmation

An early discussion of evidence is represented by Hempel's (1965, pp.3-46) "Studies in the Logic of Confirmation." This article principally deals with formulating a series of "conditions of adequacy for confirmation." Carnap (1962, p. 468) has since exposed certain inconsistencies in Hempel's "conditions of adequacy for confirmation"; however, Hempel's article has still served as the impetus for a substantial amount of research on the subject.

The article has also provided an outline of the major elements of the confirmation process.

Hempel identifies four elements of confirmation, which include "observation reports," "hypotheses," "observation techniques," and "background information." Hempel's first element, the concept of an "observation report," is defined as "...a statement or sentence which either asserts or derives that a given object has a certain observable property (e.g., 'a' is a raven) or that a given sequence of objects stand in a certain observable relation (e.g., 'a' is between 'b' and 'c')..." (Hempel, 1965, p. 22). An "observation report" is, in essence, a recording by the researcher of an observation he has made during the conduct of the experiment.

The second element of confirmation, the concept of a "hypothesis," is defined as "...any sentence which can be expressed in the assumed language of science no matter whether it is a general sentence containing qualifiers or a particular sentence referring only to a finite number of particular objects (1965, p.22)." Hempel's "hypotheses" (1965, pp. 39-40) may be classified as either "quantitative" or "qualitative." Quantitative hypotheses contain existential qualifiers such as the words "some" or "all."² Examples of such hypotheses are the phrases, "All swans are white" or "Some roses are red." On the other hand, "qualitative"

hypotheses do not contain existential qualifiers.³ An example of such a hypothesis is the phrase, "object 'a' turns green".

The third element of confirmation is the concept of an "observation technique" (1965, p.22). "Observation techniques" represent the methods by which observations are gathered by the researcher and recorded as "observation reports." In his discussion of "observation techniques," Hempel emphasizes that they include any method for gathering observations including, microscopes, direct visual inspection, and any other techniques available to the researcher.

Hempel's final element of confirmation is revealed in his discussion concerning the "paradoxes of confirmation." This element has been labelled by other authors (Hanson, 1965, p.62; Achinstein, 1983a, p.162) as "background information." According to these authors, "background information" consists of all of the information or knowledge available to the researcher (prior to conducting the experiment) which is relevant to performing the experiment and interpreting the experiment's results.

In order to stress the importance of background information, Hempel provides an example of a scientific experiment (1965, p.19). The example begins with the hypothesis that "whatever does not burn yellow, is not sodium." In order to confirm this hypothesis, two

mutually exclusive experiments are performed. In the first experiment the researcher burns a piece of ice over a flame. In this experiment, the researcher is not aware that the substance he is burning is ice. The result of this experiment, as might be expected, is that the ice does not burn yellow; this experiment, therefore, is considered as confirmation for the hypothesis that "whatever does not burn yellow, is not sodium." In the second experiment the researcher performs the same task as in the first experiment. In the second experiment, however, the researcher knows beforehand that the substance he is burning is ice. As might be expected, the ice does not burn yellow. In the case of the second experiment, the experiment is totally irrelevant in verifying (or falsifying) the hypothesis; assuming that the researcher is knowledgeable about the basic properties of chemistry, he should be aware that ice does not contain sodium and that ice should not burn yellow.

In the foregoing example, the results of the second experiment are rendered irrelevant by two factors: the researcher's prior knowledge of the circumstances of the experiment and the researcher's professional training. Hanson has emphasized the importance of these two factors in experimental situations by stating that "...background information...derives as much from what is obvious in a

situation as from discursive knowledge gained through training (1965,p.62)." In accordance with Hempel's example and Hanson's views on "background information," the "situational contingencies" of the experiment and "professional training" of the researcher are the two factors which constitute the element of "background information."

4.11 Summary of Discussion 1

Discussion 1 has presented the model's four inputs. First, the hypothesis is the proposition investigated by the researcher. Secondly, observation reports are the observations recorded by the researcher used to support or contradict the hypothesis. Thirdly, observation techniques are the methods used by the researcher to gather observation reports. Finally, background information, which is the situational context of the experiment, consists of the researcher's professional training and the situational contingencies of the experiment. The next discussion presents the basic procedures of confirmation.

4.2 Discussion 2: The Process of Confirmation

On the basis of his four elements of confirmation, Hempel outlines a general process of confirmation

(1965, pp.39-43). A schematic diagram of this process has been developed and is shown in Exhibit 4.1 (see page 67). As shown in this exhibit, four inputs flow into the confirmation process. These inputs consist of the hypothesis, the researcher's background information, the observation (gathered through the appropriate observation technique), and the observation report.⁴

Additionally, the confirmation process consists of three phases.⁵ The first phase consists of accepting or rejecting the observation report by "...performing certain experiments or systematic observations..." (Hempel, 1965, p.41) and considering whether the observation report can be accepted on the basis of "experiential findings." The objective of this phase is to assess the validity of the observation report by determining whether the observation report can be verified through direct observation or logical inference and whether the observation report can be comprehended by individuals with similar professional backgrounds. In Exhibit 4.1, the first phase of the confirmation process is depicted by the node labelled DETERMINE VALIDITY OF THE OBSERVATION REPORT.

The second phase of confirmation consists of examining an accumulation of observation reports in order to determine the type of evidence which has been obtained.⁶ This phase is represented in Exhibit 4.1 by

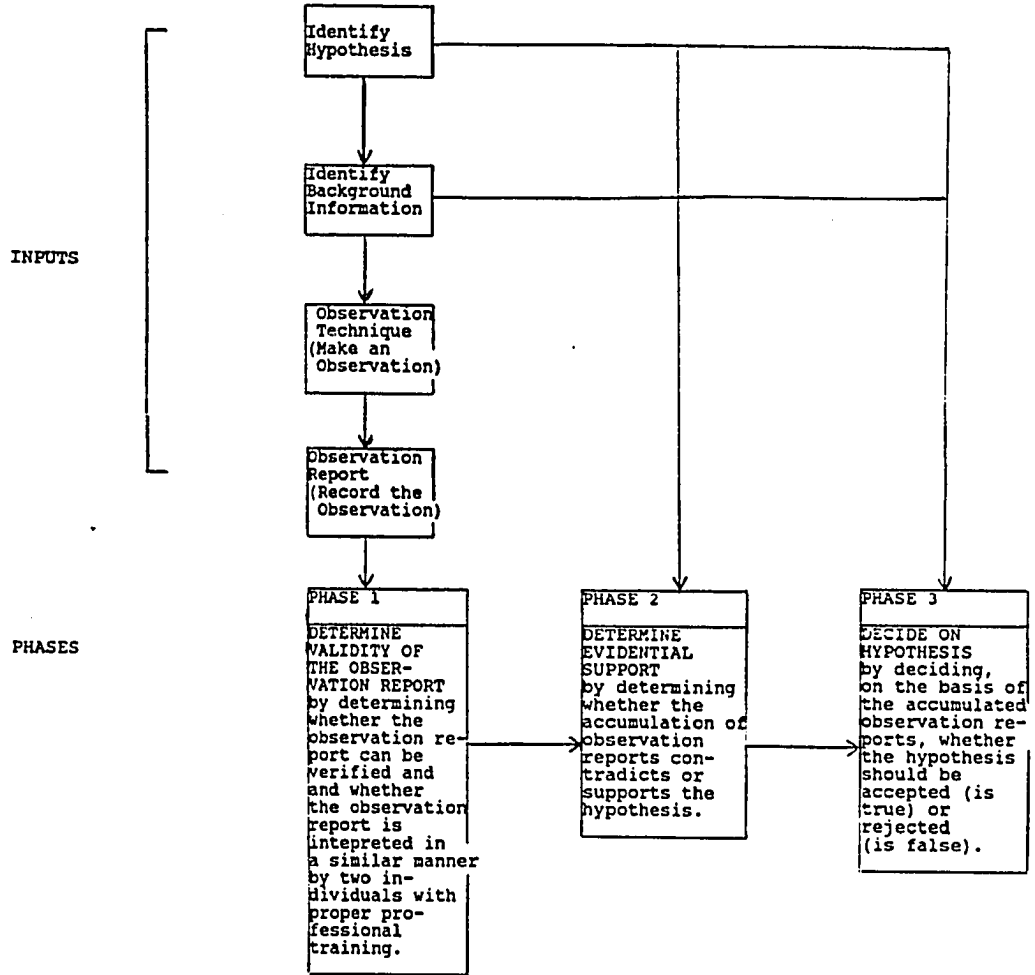


Exhibit 4.1: Schematic Diagram of Hempel's Discussion on Confirmation

the node labelled DETERMINE EVIDENTIAL SUPPORT. The inputs into this phase of the process are the hypothesis, background information, and the "valid" observation report (from phase 1).

The third phase of confirmation consists of making a decision concerning whether the hypothesis should be accepted or rejected. Within this context, "accept" means that the hypothesis is deemed true; "reject," however, means that the hypothesis is deemed false. The decision concerning the hypothesis is based on the evidential support for the hypothesis determined in the second phase of the process. In Exhibit 4.1, this phase of the confirmation process is represented by the node labelled "DECIDE ON HYPOTHESIS." Each of the phases of confirmation is now discussed in more detail.

4.21 Phase One: Determine the Validity of the Observation of Reports

The first phase of confirmation consists of "...the performance of suitable experiments or observations and the ensuing acceptance of observation reports stating the results obtained" (Hempel 1965, p.41). The purpose of this phase of confirmation, which is detailed in Exhibit 4.2 (see page 69), is to assess the validity of the observation report. Two criteria, which are labelled VERIFIABILITY and PROFESSIONAL

Criteria:

VERIFIABILITY

PROFESSIONAL
AGREEMENT

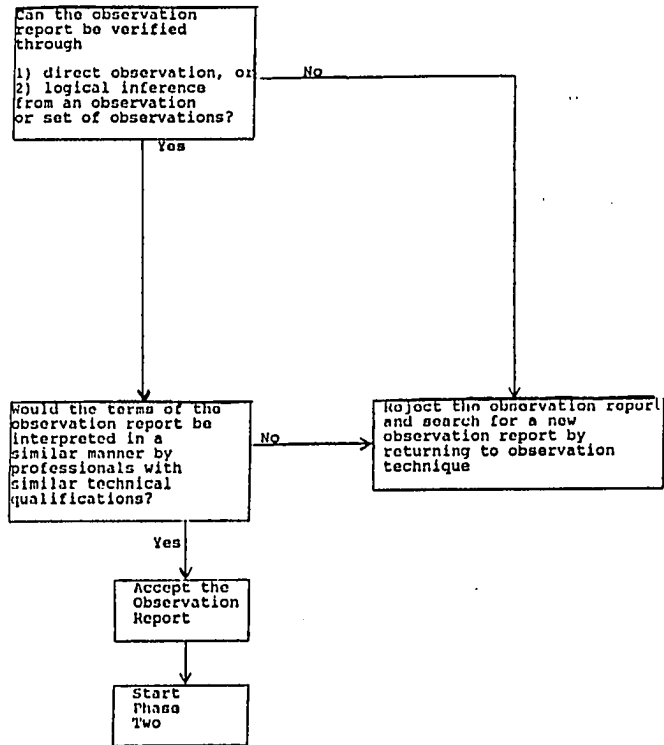


Exhibit 4.2: Phase One of Confirmation-
Determine Validity of the Observation
Report

AGREEMENT, must be satisfied in order for the observation report to be validated.

The first criterion, which reflects an "empiricist" viewpoint, is labelled the VERIFIABILITY requirement.⁷ This criterion bases the "acceptance" of the observation report on whether the observation report can be verified either through direct observation or logical inference. Hempel (1965, p.104) emphasizes the importance of including both "direct observation" and "logical deduction" in this definition of verifiability by stating that:

.....the term "verifiability" is to indicate, of course, the conceivability, or better, the logical possibility, of evidence of an observational kind which, if actually encountered, would constitute evidence for the given sentence; it is not intended to mean the technical possibility of the experiment, and even less the possibility of actually finding directly observational phenomena which constitute evidence for that sentence which would be tantamount to the actual existence of such evidence and would thus imply the truth of the given sentence.

Hempel also states that excluding "inference" from this definition of verifiability would result in the rejection of many plausible observation reports simply because they have not been directly observed. Therefore, according to Hempel, "verifiable" observation reports include such logically inferable assertions as "...that the planet Neptune and the

Antarctic Continent existed before they were discovered" (1965, p.103).

In accordance with Hempel's argument that "verifiability" should include both "direct observation" and "logical inference," as shown in Exhibit 4.2, the "verifiability" requirement is satisfied through two means. First, the verifiability criterion is satisfied if the observation report can be observed directly. Secondly, the verifiability criterion is satisfied if the observation report can be logically inferred. Consequently, for example, the observation report, "it rained last night," could be verified either by observing the actual rain, or by arising in the morning, observing water on the ground, and inferring that, "it rained last night."

In addition to the "empiricist" viewpoint for accepting observation reports, there is also an "operationist" criterion.⁸ This criterion is similar to the "intersubjectivity" criterion espoused by ASOBAC. Under this criterion, an observation report is accepted if the terms incorporated in the observation report would be of such a kind that "... different observers, can by means of direct observation, arrive at a high degree of agreement on whether the term applies to a given situation" (Hempel, 1965, p.127). With respect to this "high degree of agreement," Hanson (1965, p.17) emphasizes that technical training plays an important

role in determining whether two individuals correctly interpret an observation report:

The infant and the layman can see: they are not blind. But they cannot see what the physicist sees; they are blind to what he sees. We may not hear that the oboe is out of tune, though this will be painfully obvious to the trained musician. The elements of the visitor's visual field, though identical with those of the physicist, are not organized for him as for the physicist; the same lines, colours, shapes are apprehended by both, but not in the same way. There are indefinitely many ways in which a constellation of lines, shapes, patches may be seen. Why a visual pattern is seen differently is a question for psychology, but that it may be seen differently is important in any examination of the concepts of seeing and observation.

In accordance with Hanson's view that technical training plays an important role in determining whether two individuals are in agreement concerning an observation, the "operationist" criterion in Exhibit 4.2 is labelled PROFESSIONAL AGREEMENT. Furthermore, this criterion is more satisfied as greater degrees of agreement are obtained by two individuals with the similar professional backgrounds. If the observation report satisfies both criteria, it is accepted. Under these circumstances, the second phase of the process is entered. However, if neither of these criteria are satisfied, new observation reports must be obtained.

4.22 Phases Two and Three: Determine Evidential Support
and Decide on the Hypothesis

Once the observation report has been accepted, the second phase of the process consists of "...confronting the given hypothesis with the accepted observation report ..." (Hempel 1965, p.41) in order to ascertain whether the accepted observation report constitutes "...confirming, disconfirming, or irrelevant evidence with respect to the hypothesis" (1965, p.41). This phase of the model has been labelled DETERMINE EVIDENTIAL SUPPORT.⁹ The third phase of the model, which has been labelled DECIDE ON HYPOTHESIS, consists of making a decision concerning the truth of the hypothesis. In Exhibit 4.3, (see page 74) these phases of the model have been combined into four steps. Prior to describing these steps, certain aspects of these latter phases of confirmation must be discussed.

Three inputs flow into these phases of the model. The first input is the hypothesis. The second input is the background information. The third input is the observation report. An important point is that only observation reports which have been "accepted" in the first phase of the model may be used as inputs to these latter phases of the confirmation process.

In addition to the inputs, four types of confirmation are shown in Exhibit 4.3. These types of

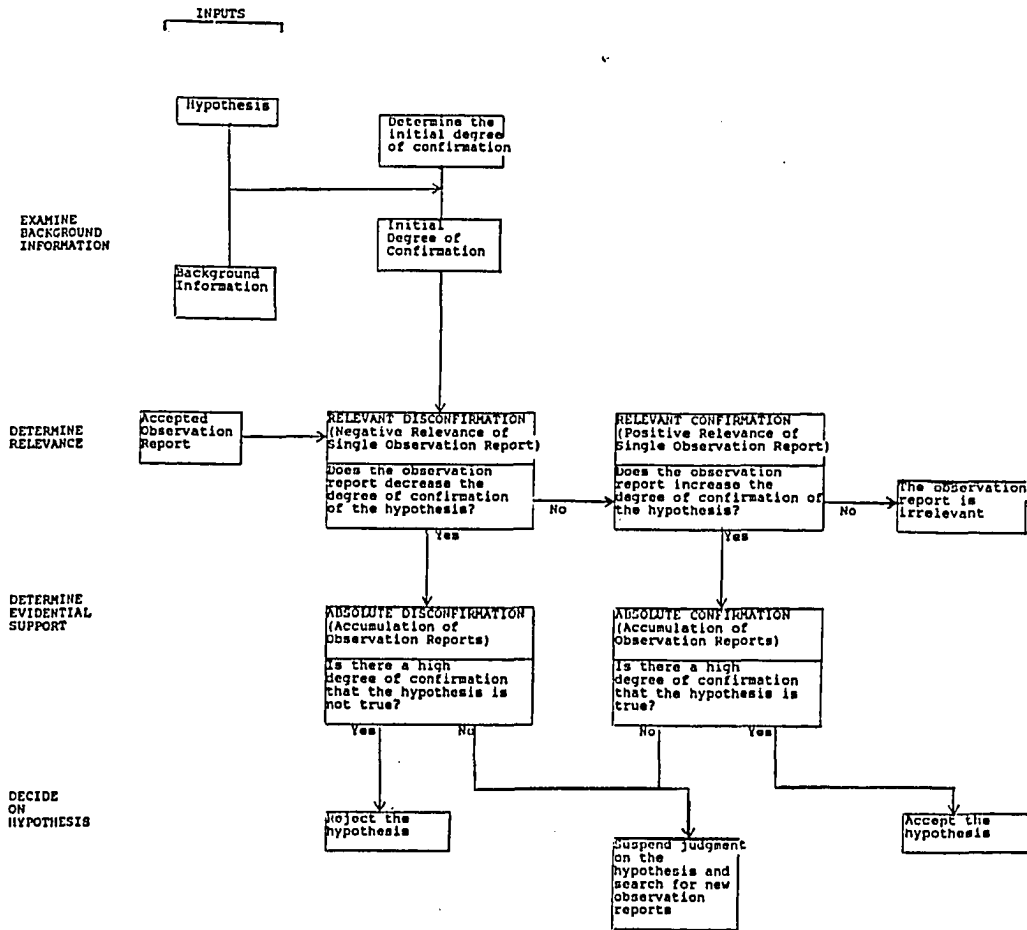


Exhibit 4.3: Phases Two and Three of Confirmation- Determine Evidential Support and Decide on the Hypothesis

evidence are labelled "relevant disconfirmation," "relevant confirmation," "absolute disconfirmation," and "absolute confirmation." According to Hempel (1965,p.39), "confirmation" means that the observation report supports the hypothesis; disconfirmation, however, means that the observation report contradicts the hypothesis.

Additionally, Salmon (Achinstein, 1983a, p.96) distinguishes between two forms of confirmation (disconfirmation) which he labels as confirmation in the "relevance sense" and confirmation in the "absolute sense."¹⁰ Confirmation in the "relevance sense" means that the observation report renders the hypothesis "...more acceptable or better founded ..." (Salmon, 1983, p.95) than it would have been without the observation report. In the "relevance sense," therefore, an observation report confirms (or disconfirms) a hypothesis if it increases (in the case of confirmation) or decreases (in the case of disconfirmation) the "degree of confirmation" for the hypothesis.¹¹

From a different perspective, Salmon (1983, p. 95) states that a hypothesis is confirmed in the "absolute sense" if the observation report makes the "degree of confirmation" on the hypothesis "high."¹² A hypothesis, therefore, is absolutely confirmed if its "degree of confirmation" exceeds some high "benchmark."

In discussing the concepts of "relevant" and "absolute" confirmation, Salmon emphasizes that the hypothesis may be confirmed in one "sense" without¹³ being confirmed in the other "sense":

Of course, we may believe that hypotheses can achieve high degrees of confirmation by an the accumulation of many positive instances... It is initially conceivable that a hypothesis with a low degree of confirmation might have its degree of confirmation increased repeatedly by positive instances, but in such a way that the confirmation approaches 1/4 (say) rather than 1. Thus, it may be possible for hypotheses to be repeatedly confirmed (in the relevance sense) without ever getting confirmed (in the absolute sense). It can work the other way. A hypothesis "h" that already has a high degree of confirmation on evidence e, even though the addition of evidence e.i., does not raise the degree of confirmation on h. In this case, h is confirmed (in the absolute sense) without being confirmed (in the relevance sense) on the basis of additional evidence i. (Achinstein, 1983a, p.96)

In this discussion, Salmon implicitly states that absolute confirmation may be determined by an¹⁴ accumulation of individual observation reports.

Moreover, like Hempel's second and third phases of confirmation, Salmon's discussion describes a situation wherein a hypothesis's "initial degree of confirmation" is augmented with single, relevant observation reports. As these single observation reports are accumulated, a

"totality" of observation reports with a total "degree of confirmation" is developed. Once the "degree of confirmation" is high, the hypothesis is absolutely confirmed.

In Exhibit 4.3, the concept of a body of observation reports is embodied in the four steps of the latter phases of the model. The first step, which is labelled EXAMINE BACKGROUND INFORMATION, consists of an initial examination of background information in order to determine the "initial degree of confirmation" associated with the hypothesis. The second step, which is labelled DETERMINE RELEVANCE, consists of determining whether each observation report is "negatively relevant" (decreases the degree of confirmation) or "positively relevant" (increases the degree of confirmation) with respect to the hypothesis.¹⁵ If the observation report is negatively relevant, it is added to a total body of evidence which contradicts the hypothesis (ABSOLUTE DISCON-¹⁶FIRMATION). However, if the observation report is positively relevant, it is added to a body of observation reports which support the hypothesis (ABSOLUTE CONFIRMATION). If the observation report is neither negatively nor positively relevant, it is considered irrelevant and is discarded. The third step, which is labelled DETERMINE EVIDENTIAL SUPPORT, consists of determining whether the observation report,

in conjunction with the totality of all other observation reports, constitutes absolute disconfirmation or absolute confirmation. If the "degree of confirmation" associated with negatively relevant observation reports is high, absolute disconfirmation is obtained. If the "degree of confirmation" associated with positively relevant observation reports is high, absolute confirmation is obtained.

In the fourth step, which is labelled DECIDE ON HYPOTHESIS, a decision concerning the correctness of the hypothesis is made. According to Hempel, this decision entails "...either accepting or rejecting the hypothesis on the strength of the confirming or disconfirming evidence constituted by the accepted observation reports, or in suspending judgement, awaiting the establishment of further relevant evidence (1965, p.41)."¹⁷ Furthermore, the decision is made by referring to "...the amount of confirming or disconfirming evidence for the hypothesis which is contained in the totality of the accepted observation sentences" (1965, p.41).

Therefore, the decision concerning the hypothesis is made by referring to the accumulations of observation reports (ABSOLUTE DISCONFIRMATION or CONFIRMATION). If the "totality" of observation reports contradicting (ABSOLUTE DISCONFIRMATION) the hypothesis

disconfirm it to a "high" degree, the hypothesis is deemed false and is rejected. On the other hand, if the "totality" of observation reports supporting (ABSOLUTE CONFIRMATION) the hypothesis confirm it to a "high" degree, the hypothesis is deemed true and is accepted. Finally, if neither absolute disconfirmation or confirmation is obtained, judgement on the hypothesis is suspended until further observation reports can be obtained and added to the total bodies of observation reports.

4.23 Summary of Discussion 2

Discussion 2 has presented an overview of the basic phases of the model. The first phase of the model, which is illustrated in Exhibit 4.2, consists of determining whether the observation report is valid. Such validity is obtained if the observation report satisfies two criteria. The first criterion, which has been labelled VERIFIABILITY, is satisfied if the observation report can be verified either through direct observation or logical inference. The second criterion, which is labelled PROFESSIONAL AGREEMENT, is met if two individuals with sufficient and similar professional credentials interpret the observation report in a similar manner.

The second and third stages of confirmation, which are illustrated in Exhibit 4.3, have been combined into four steps. The first step, which is labelled EXAMINE BACKGROUND INFORMATION, consists of examining background information in order to determine the "initial degree of confirmation" associated with the hypothesis. The second step, which is labelled DETERMINE RELEVANCE, consists of determining whether the observation report increases or decreases the "initial degree of confirmation" associated with the hypothesis. The third step, which is labelled DETERMINE EVIDENTIAL SUPPORT, ascertains whether the totality of observation reports has raised the degree of confirmation either to obtain ABSOLUTE DISCONFIRMATION, or ABSOLUTE CONFIRMATION. The fourth step of the process, which is labelled DECIDE ON HYPOTHESIS, consists of deciding whether the hypothesis is true or false by referring to the type of evidence obtained.

4.3 Discussion 3: Concepts of Confirmation

The preceding section outlined four types of evidence; however, very little detail was provided concerning how the types of evidence are determined. In order to provide this detail, this section discusses various types of confirmation that have been espoused by philosophers of science. These types of evidence

include inductive, deductive, retroductive, and a hybrid approach to confirmation.

4.31 Inductive Views of Evidence

In Logical Foundations of Probability (1962), Rudolf Carnap presents the major definitions of inductive confirmation. Carnap's concepts of confirmation are inductive because they confirm a hypothesis on the basis of the repetitions of observation reports (Hanson, 1965, p.86). Carnap identifies three major types of inductive confirmation which he labels as the "classificatory," "quantitative," and "comparative" concepts of confirmation. Of these types of confirmation, only the "classificatory" and "quantitative" concepts of confirmation are discussed in this section. ¹⁸

The principal difference between the classificatory and quantitative concepts of confirmation lies in the "preciseness" used to examine confirmation. The classificatory concepts of confirmation examine confirmation in qualitative terms. The quantitative concepts of confirmation, however, examine confirmation in terms of specific numbers or degrees. Therefore, for example, the classificatory concepts of confirmation might examine whether an observation report increases the probability of a

hypothesis. The quantitative concepts of confirmation, however, examine the specific degree by which an observation report increases the probability of a hypothesis. Each of these concepts of confirmation is now discussed.

4.311 Classificatory Concepts of Confirmation

Carnap's classificatory forms of confirmation may be described in terms of the absolute and relevance definitions of confirmation described above.¹⁹ In "classificatory" form, Carnap expresses the concept of absolute confirmation as, " $c(h,e) > b$, where b is a fixed number" (1962, p.xvi). In essence, this definition states that the observation report absolutely confirms a hypothesis if the probability of the hypothesis (h), in the presence of observation report (e), exceeds some high fixed number (b). In addition to absolute confirmation, the classificatory form of the relevant confirmation is expressed by Carnap as, " $D(h,i) > c(h,t)$ " (1962, p.xvi). This definition states that the additional observation report (i) relevantly confirms a hypothesis if the probability of the hypothesis (h), in the presence of the additional observation report (i), is greater than the probability of the hypothesis (h), considering only the initial observation report (t).

4.312 Quantitative Concepts of Confirmation

In addition to "classificatory" concepts of confirmation, Carnap also formulates "quantitative" concepts of confirmation. Like the classificatory forms of confirmation, the quantitative types of confirmation may also be expressed in the absolute and relevance "senses" of evidence. First, Carnap states his quantitative concept of absolute confirmation as " $c(h,e) > u$ (1962, p.xvi)." This expression states that the observation report (e) absolutely confirms a hypothesis (h) if the probability of the hypothesis (h), in the presence of the observation report (e), exceeds a specific number (u). In addition, Carnap defines the quantitative concept of relevant confirmation as " $D(h,i)=u$ " (1962, p.xvi). This expression states that the additional observation report (i) "relevantly" confirms the hypothesis (h) if the probability of the hypothesis (h), in the presence of the additional observation report (i), increases by a specific number (u).

In a review of Carnap's definitions of confirmation, Salmon (1983, pp.100-103) concludes that more emphasis should be placed on the quantitative concepts of confirmation:

If we are willing, as Carnap has done, to regard degree of confirmation ...as a probability-that is, as a numerical factor that satisfies the probability calculus, then we can bring the structure of the quantitative probability concept to bear on the problems of confirmation.

However, Salmon also states that Carnap's "quantitative" definitions are incomplete because they only consider the probability of the hypothesis (h) in the presence of the observation report (e). Salmon also emphasizes that, in order for the "quantitative" forms of confirmation to be complete, they should consider the initial (prior) probabilities of both the hypothesis (h) and the evidential matter (e). In order to incorporate these prior probabilities, Salmon states that confirmation should be viewed in terms of Bayes' theorem, which emphasizes the importance of "background information."²⁰

4.313 Criticisms of Inductive Evidence

In general, the critics of inductive confirmation have stated that these approaches to confirmation ignore the notion that inferences are made not only from the observation report to the hypothesis, but also from the hypothesis to the observation report. According to these critics, ignoring the notion that inferences may flow from the hypothesis to the

observation report results in a failure to establish an "explanatory connection" between a hypothesis and an observation report.²¹ For instance, Hanson (Achinstein 1983a, p.56) states that "...the inductive view rightly states that laws are got from inference of data. It also wrongly suggests that the law is but a summary of these data, instead of being (what at least it sometimes must be) an explanation of the data."

Achinstein, (1983a) provides some examples which demonstrate that Carnap's classificatory definitions of both absolute and relevant confirmation fail to consider such "explanatory" relationships between a hypothesis and an empirical observation. One of Achinstein's examples considers Carnap's "classificatory" concept of absolute confirmation. Recall that this "classificatory form" of confirmation considers the hypothesis (h) to be "absolutely" confirmed by the observation report (e) if there is a high probability that the hypothesis (h), in the presence of the observation report (e) is true. Achinstein (1983a, p.154), however, uses an example of a pregnant man to refute this concept of confirmation:

Let e be the information that this man eats the breakfast cereal Wheaties. Let h be the hypothesis that this man will not become pregnant. The probability of h given e is extremely high (since the probability of h is extremely high and not diminished by the assumption of e). But e is not evidence that h.

While this particular example is rather extreme, it seems to demonstrate the fault with viewing the concept of confirmation simply in terms of pure probabilities. Even though the probability of a hypothesis may be high in the presence of an observation report, the high probability of the hypothesis may be due to factors other than the observation report being considered. In this example, the observation report that the man eats Wheaties obviously does not explain why or how the man will not become pregnant. The result is that an irrelevant observation report (Wheaties) is considered to absolutely confirm the hypothesis (that the man will not get pregnant). As a final observation concerning this example, Achinstein points out (1983a, p.161) that, even if the background information that "men don't get pregnant" is included in the example, according to Carnap's classificatory definition of absolute confirmation, the man's consumption of Wheaties is still evidence for the fact that he will not get pregnant.

In addition to questioning the Carnap's classificatory concept of "absolute" confirmation, Achinstein also criticizes Carnap's classificatory concept of relevant confirmation. Recall that the classificatory concept of "relevant confirmation" states that an observation report (e) confirms the

hypothesis (h) if the probability of the hypothesis (h) increases in the presence of the observation report (e). Among other examples, Achinstein provides an example concerning Mark Spitz. This example is intended to demonstrate that the classificatory concept of relevant confirmation fails to consider that certain events may occur which increase the probability that a hypothesis will become true but which cannot be reasonably considered as evidence:

When Mark Spitz goes swimming he increases the probability that he will drown; but the fact that he is swimming is not evidence that he will drown (1983a,p.152).

As in the case of the classificatory form of absolute confirmation, there is a lack of an explanatory connection between the hypothesis and the evidential matter. Moreover, the observation report that "Mark Spitz has gone swimming" does not explain how Mark Spitz will drown.

Like Hanson and Achinstein, Goodman (1983, p. 63) criticizes inductive confirmation from the perspective that it fails to establish an explanatory connection between the observation report and the hypothesis. Similar to the Mark Spitz example, Goodman argues that purely inductive approaches of confirmation are weak with respect to the "projection" (prediction) of future events. Moreover, Goodman argues that the simple observation of past events is deficient in predicting

future events because such observation does not explain why future events may occur.

4.314 Objective and Subjective Concepts of Probability

Carnap's definitions of confirmation are susceptible to Achinstein's examples because the concept of probability in these definitions is not clearly defined. This ambiguity may be overcome if the concepts of objective and subjective probability are considered. ²² Salmon (1966, p.49) describes objective (and subjective) concepts of evidence in terms of "rational belief":

A promising probability concept identifies probability with degree of rational belief. To say that a statement is probable in this sense means that one would be rationally justified in believing it; the degree of probability is the assent a person would be rationally justified in giving it. We are not, of course, referring to the degree to which anyone actually believes in the statement, but rather the degree to which one could rationally believe it. Degree of actual belief is a purely psychological concept, but degree of rational belief is objectively determined by the evidence. To say that a statement is supported in this sense means that it is supported by the evidence.

Using Salmon's distinction between probability defined in terms of "actual" (subjectively determined) or "rational" (objectively determined) belief, the concept of probability in Carnap's definitions of confirmation may be defined in terms of "rational probability"; that

is, Carnap's definitions of probability may be seen in terms of the probability (or change in probability) that a "rational" individual would attach to the hypothesis.²³

If this concept of probability is used, Achinstein's examples may be rebutted.²⁴ For instance, returning to the Wheaties example, no rational man would believe that the reason (cause) for the high probability of the hypothesis (the fact that the man will not become pregnant) is the observation report (that the man eats Wheaties). However, an irrational man may personally (subjectively) believe that his consumption of wheaties would enable him not to become pregnant. Even if the background information that "men don't get pregnant" is incorporated into the example, this man's irrationality may still lead him to believe that men do get pregnant.

4.32 Deductive Concepts of Evidence

Given that purely "inductive" confirmation has been criticized from the standpoint that it fails to establish a qualitative ("explanatory") connection between a hypothesis and an observation report, some philosophers have stated that a researcher must conduct his investigation on a deductive basis which only flows from the hypothesis to the observation report (rather than from the observation report to the hypothesis).

The "purest" deductive approach to confirmation has been labelled as "hypothetico-deductivism." Essentially, "hypothetico-deductivism," which will hereafter be referred to as the "H-D" approach to confirmation, considers the observation report to "confirm" a hypothesis if the hypothesis "explains" the existence or occurrence of an observation report. The H-D approach to confirmation considers a scientific system as being a hierarchy of hypotheses. Braithewaite (1959, p.12) describes the H-D system of confirmation as follows:

A scientific system consists of a set of hypotheses which form a deductive system; that is, which is arranged in such a way that from some of the hypotheses all the other hypotheses logically follow. The propositions in a deductive system may be considered as being arranged in an order of levels, the hypotheses at the highest level being those which occur only as premises in the system, those at the lowest level being those which occur only as conclusions in the system, and those at intermediate levels being those which occur as conclusions of deductions from higher level hypotheses and which serve as premises for deductions to lower-level hypotheses.

In order to demonstrate his system of hypotheses, Braithewaite (1959, p.12) provides a small deductive system of hypotheses. The highest level hypothesis in this system is stated as, "Every body near the earth freely falling towards the earth falls with an acceleration of 32 feet per second." From this hypothesis the second hypothesis is inferred. The

second hypothesis in the system is stated as, "Every body near the earth freely falling towards the earth falls $16t^2$ feet in t seconds, whatever the number t may be." Since the second hypothesis deals with a calculation of how far a body would fall in a specific time period, the third hypothesis is a specific proposition of how far a free-falling object would fall in " t " seconds: "Every body starting from rest and freely falling for t seconds toward the earth falls a distance of $16t^2$ feet."

Since H-D systems consist of a hierarchy of hypotheses where the highest level hypotheses are used to infer lower level hypotheses, the method for testing the system is "...effected by testing the lowest level hypotheses in the system" (Braithewaite, 1959, p.13). The confirmation of the lowest level hypotheses, therefore, is the "...the criterion by which the truth of all the hypotheses in the system..." (Braithewaite, 1959, p. 13) are tested. Consequently, in order to test the foregoing system of hypotheses concerning free-falling bodies, the researcher would test the third hypothesis by conducting an experiment which would ascertain whether an object would fall 16 feet in t seconds. If the experiment refuted the third hypothesis, then the two higher order hypotheses would also be refuted.

4.321 Criticisms of the Hypothetico-Deductive Approach

Criticisms of the purely hypothetico-deductive approach to confirmation have been threefold. Only one of these criticisms is relevant in this discussion.²⁶ This criticism is that hypothetico-deductivism enables the researcher to choose (from many alternative hypotheses) the hypothesis which is most favorable to the researcher. Recall that in the hypothetico-deductive account to confirmation an observation report is considered as "confirming" a hypothesis if the hypothesis "explains" the observation report. However, in order to demonstrate how this criterion enables a researcher to choose between many alternative hypotheses, Achinstein (1983a, p.158) provides an example of a simple hypothetico-deductive system with two hypotheses. The higher-order hypothesis states that "At precisely 3:05 last night 2 monkeys removed the remaining 3.7 gallons of gas in my tank and substituted crushed bananas (1983, p. 158). The lower level hypothesis states that "my car won't start this morning." In this case, one could verify the system of hypotheses by attempting to start the car. If the car did not start, then, according to the hypothetico-deductive criterion, the higher level hypothesis that monkeys "invaded the gas tank" would be verified. Obviously, this hypothesis is rather improbable.

Additionally, many other hypotheses could also be conjured up, such as that squirrels filled the gas tank with acorns.

In order to alleviate the possibility that the H-D approach may allow a researcher to choose the hypothesis which is most favorable, Popper (1959) has proposed a deductive system where the researcher first tests those hypotheses which are the least probable. In this manner, if a highly improbable hypothesis is not "disconfirmed" by many scientific observations, there is a great possibility that it may be true. In essence, Popper is stating that the best hypothesis is the one for which the greatest amount of "negative assurance" can be established. Hempel (1965, p.43) argues that Popper's deductive system is deficient because it limits the types of hypotheses which may be admitted for scientific examination. Therefore, a hypothesis with a high probability for confirmation, such as the "qualitative" hypothesis "there are red roses," may not be admitted for scientific examination.

4.33 Retroductive Evidence

In addition to inductive and deductive approaches to confirmation, Hanson (1965, pp.85-86) argues that hypotheses can also be confirmed through "retroductive" reasoning. Like the inductive approach to evidence, the

retroductive approach flows from the observation report to the hypothesis. However, while the inductive approach confirms a hypothesis through "repetitions" of empirical instances of the hypothesis, the retroductive approach attempts to explain the existence or occurrence of the observation report by referring to the hypothesis. Hanson (1965, p.86) describes the sequence of retroductive reasoning as follows:

1. Some surprising phenomenon P is observed.
2. P would be explicable as a matter of course if H were true.
3. Hence there is reason to think that H is true.

Hanson (1983, pp.53-62) argues that such retroductive reasoning is used by researchers to formulate initial hypotheses (highest level) in H-D systems. Therefore, in Hanson's view, initial hypotheses are formulated or revised when "surprising" events occur which are different from the researcher's initial expectations.

Achinstein (1983a, p.158), argues that retroductive evidence is susceptible to the "multiple explanations" criticism attributed to "hypothetico - deductivism." Therefore, for example, the "surprising phenomenon" that "my car won't start this morning" would be "explicable as a matter of course" if the hypothesis that "monkeys placed crushed bananas in my gas tank" were true. However, there is obviously no "reason to think" that this hypothesis is true.

4.34 Achinstein's Hybrid Approach

The inductive, deductive, and retroductive approaches to evidence each have weaknesses. The purely inductive approaches fail to formulate "explanatory connections" between hypotheses and observation reports. The result of this failure is that irrelevant observation reports may be admitted as evidence. Additionally, while the deductive approaches to confirmation attempt to develop an "explanatory connection" between a hypothesis and an observation report, they allow a researcher to choose between many alternative hypotheses. This weakness of hypothetico-deductivism also pertains to retroductive evidence.

In order to address these problems, Achinstein (1983a, pp.145-174) has developed a hybrid approach to confirmation. Achinstein's approach to confirmation encompasses a set of four standards which must be satisfied by a set of observation reports in order to confirm a hypothesis. Achinstein's third and fourth standards are concerned with confirmation.

Achinstein's third standard is a basic restatement of Carnap's classificatory concept of ABSOLUTE CONFIRMATION. Achinstein (1983a., p.159) states this requirement in a manner which is similar to, "the probability of hypothesis (h), given the observation

report (e) and the background information (b) must be high." This standard, which will be labelled as the "probability requirement," is purely inductive in nature and examines whether there are sufficient observation reports to ensure a "high probability" that the "hypothesis" is true.

Achinstein's fourth requirement addresses the need for an "explanatory connection" between the hypothesis and the observation reports. This requirement, which is labelled as the "explanatory requirement," is stated by Achinstein (1983a, p.159) in a manner similar to, "The probability that there is an explanatory connection between the hypothesis (h) and the observation report (e), given the background information (b), must be high." In defining his "explanatory" requirement, Achinstein (1983a, p.150, 161) states that whether there is a "high probability" of an explanatory connection is determined by whether a "rational individual" would have reason to think that such high probability is caused by the observation report. Also, Achinstein's second requirement does not imply that the explanatory connection must be established on a deductive basis which flows from the hypothesis to the observation report (as suggested by the hypothetico-deductivists). Specifically, Achinstein states that it must be probable that "...given h and e, that h is true because e is, or

conversely, that some hypothesis correctly explains both (1983a, p.159). The explanatory connection, therefore, may be established on either a deductive basis where the hypothesis (h) "explains" the observation report (e) or on a "retroductive" basis where the observation report (e) would be explicable if the hypothesis (h) were correct.

Achinstein (1983b, pp.378-381) provides examples which attempt to demonstrate that his criteria alleviate the weaknesses of the irrelevant evidence (the problem of the "inductivists") and multiple hypotheses (the problem of the "deductivists"). In these examples, "h" represents the hypothesis, "e" represents the observation report, and "b" represents the background information. In his first example, Achinstein provides the following information to demonstrate the consequences of a violation of the "probability requirement":

h= some 10,000 years ago God created the earth and continues to sustain it.

e= the earth exists

b= scientific background information
(including carbon dating)

According to Achinstein, this example violates the probability requirement because, given the scientific background which may include carbon dating, the fact that the earth exists does not mean that there is a "high probability" that 10,000 years ago God created

the earth and continues to sustain it. Moreover, violation of the "probability requirement" means that multiple explanations (the problem of hypothetico-deductivism) can be made for the earth's current existence. For example, the fact that the earth exists could also be explained by the hypothesis that 10,000 years ago there was a "big bang."

An additional example adapted from Achinstein (1983b, p.379) may help ascertain the consequences of violating the "explanatory requirement". Consider the following information:

h= some 10,000 years ago God created the earth and continues to sustain it.

e= John is a Republican.

b= God is the creator of all the planets in the Universe.

Given the observation report that John is a Republican (and knowing that God created all the planets in the universe); there is a high probability that God created the earth; therefore, the "probability requirement" is satisfied. The "explanatory" requirement, however, is not satisfied. In this example, the hypothesis that "some 10,000 years ago God created the universe and continues to sustain it" hardly accounts for the fact that John is a Republican. This violation of the "explanatory requirement" means

that an irrelevant observation report (that John is a Republican) may be admitted as evidence for the hypothesis that "some 10,000 years ago God created the universe and continues to sustain it." This is the problem associated with the purely inductive forms of evidence.

4.4 Summary of Discussion 3: A Revised Model

On the basis of the various concepts of evidence, revised versions of the second and third phases of the model, which are now labelled DETERMINE VALIDITY OF THE HYPOTHESIS, are shown in Exhibit 4.4 (see page 100). As in the preliminary versions of the model, the inputs to these phases consist of the hypothesis, the accepted observation report, and the background information. Also, there are four types of evidence which are labelled RELEVANT DISCONFIRMATION, RELEVANT CONFIRMATION, ABSOLUTE DISCONFIRMATION, and ABSOLUTE CONFIRMATION.

The model is separated into four steps. The first step, which is labelled EXAMINE BACKGROUND INFORMATION, is to compare the hypothesis with the requisite background information. The purpose of this comparison is twofold. First, this comparison is performed in order to ascertain whether there are any "surprising" elements of the "background" information which might

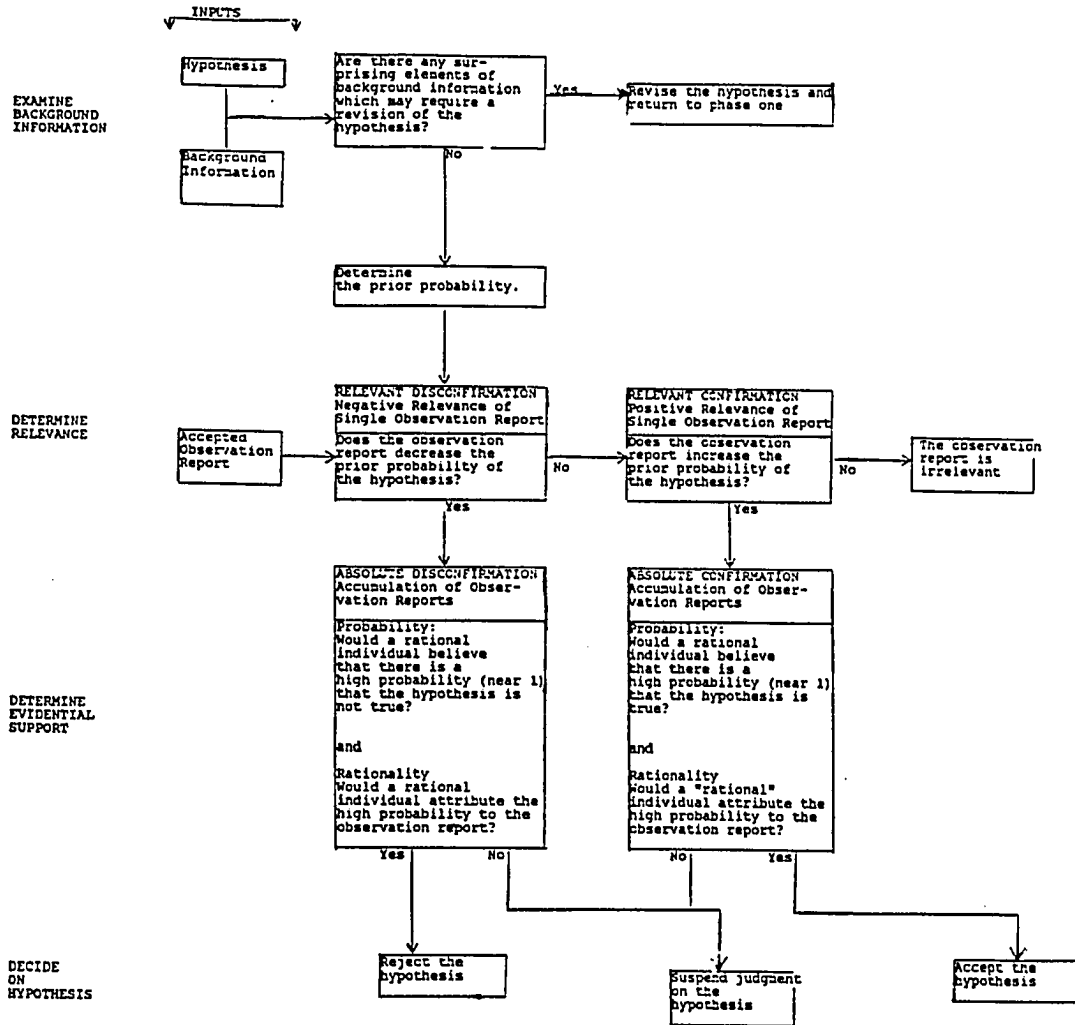


Exhibit 4.4: Phases Two and Three- Determine Validity of the Hypothesis

require a major revision of the hypothesis. This check for "surprising" elements, which is based on Hanson's view that retroductive reasoning is used to formulate initial hypotheses, is intended to ascertain whether there are any obvious elements of background information which would require a change in the hypothesis. ²⁷ As shown in the model, if there are "surprising" events, then the hypothesis must be revised; however, if no such surprising events exist, the next step is to determine the prior probability of the hypothesis. Within the context of the model, the prior probability is the initial probability of the hypothesis as determined by a rational individual (as previously defined) on the basis of background information.

After the background information is examined, the second step, which is labelled DETERMINE RELEVANCE, is to ascertain whether the observation report is negatively relevant (relevant disconfirmation) or positively relevant (relevant confirmation) with respect to the hypothesis. If the observation report is negatively relevant, it decreases the prior probability of the hypothesis (in the eyes of a rational individual) and is added to the totality of observation reports which contradict the hypothesis (absolute disconfirmation). From an opposite perspective, if the observation report is positively relevant, it increases

the prior probability of the hypothesis (in the eyes of a rational individual) and is added to the totality of observation reports which support the hypothesis (absolute confirmation). Finally, if the observation report is neither negatively nor positively relevant, it is considered irrelevant and is discarded.

The third step, which is labelled DETERMINE EVIDENTIAL SUPPORT, is to determine whether there are sufficient observation reports in the total bodies of observation reports to absolutely disconfirm or confirm the hypothesis. Absolute evidence is determined by referring to two criteria which are labelled "probability" and "rationality." The first criterion is stated in a manner similar to Carnap's classificatory form of absolute confirmation and is concerned with whether there is a high probability that the hypothesis (h) is not true (in the case of absolute disconfirmation) or true (in the case of absolute confirmation). The second requirement, which is similar to Achinstein's explanatory requirement, is concerned with whether a "rational" individual (as previously defined) would attribute the high probability of the nontruth or truth of the hypothesis to the observation report.

The fourth step, labelled DECIDE ON HYPOTHESIS, consists of making a decision concerning the hypothesis. As in the preliminary version of this

phase, the hypothesis is rejected (as incorrect) if absolute disconfirmation is obtained. On the other hand, the hypothesis is accepted (as correct) if absolute confirmation is obtained. Finally, if neither absolute disconfirmation nor absolute confirmation is obtained, judgement on the hypothesis is suspended until more observation reports can be obtained and added to the bodies of observation reports.

4.5 Summary of the Model

The entire conceptual foundation of the model, as developed throughout this chapter, is shown in Exhibit 4.5 (see page 104). The final model consists of three principal components. The first component of the model consists of the model's inputs. These inputs consist of the hypothesis, the researcher's background information, the observation gathered through the appropriate observation technique, and the observation report.

The first phase of the model, labelled DETERMINE VALIDITY OF OBSERVATION REPORT, is then entered. The observation report is considered valid if the criteria of VERIFIABILITY and PROFESSIONAL AGREEMENT are satisfied. VERIFIABILITY is satisfied if the observation report can be verified either through direct observation or logical inference. PROFESSIONAL

Exhibit 4.5 is in
Appendix Four

AGREEMENT is satisfied if two individuals with requisite training interpret the observation report in a similar manner. If both of the criteria for validating the observation report are satisfied, the next stage of the model is entered. However, if either one of them is not satisfied, new observation reports must be sought.

The next phase of the model, which is now labelled DETERMINE VALIDITY OF THE HYPOTHESIS, consists of four steps. In the first step, labelled EXAMINE BACKGROUND INFORMATION, background information is examined in order to determine if there are any "surprising events" which should cause the researcher to revise his hypothesis and to determine the prior probability associated with the hypothesis. In the second step, labelled DETERMINE RELEVANCE, a determination is made concerning whether the observation report decreases the prior probability of the hypothesis (in the case of negative relevance) or increases the prior probability of the hypothesis (in the case of positive relevance). In the third step, labelled DETERMINE EVIDENTIAL SUPPORT, the observation report is added to total bodies of observation reports in order to determine whether there are sufficient observation reports to confirm that the hypothesis is not true (in the case of ABSOLUTE DISCONFIRMATION) or true (in the case of ABSOLUTE CONFIRMATION). In the final step, labelled

DECIDE ON HYPOTHESIS, a decision is made concerning the disposition of the hypothesis. If ABSOLUTE DISCONFIRMATION has been obtained, the hypothesis is rejected (is deemed false). If ABSOLUTE CONFIRMATION is obtained, the hypothesis is accepted (is deemed true). However, if neither of these types of evidence is obtained, judgement on the hypothesis is suspended until more observation reports can be obtained.

4.6 Conclusion

This chapter presented a review of some basic concepts of evidence that have been espoused by authors in the philosophy of science. Hempel's phases of confirmation were used as a basis for delineating the basic elements and phases of the confirmation process. Subsequently, various facets of confirmation were used to develop a foundation for the model of the "competence of evidential matter." In the next chapter, legal concepts of evidence are used to develop a more pragmatic version of the model.

Endnotes

1

Hempel uses the words "confirm" and "confirmation" to describe the support provided by the "observation report" for the hypothesis. Therefore, Hempel uses the words, "confirm" and "confirmation" in a manner analogous to the definition of "evidence" in the present study. Other authors, such as Achinstein (1983a), have also used the words "confirm" and "confirmation" interchangeably with the word "evidence." As a final observation concerning this term, it is not intended to mean the confirmation of an account with a third party, as used in auditing.

2

In accounting, an example of a "quantitative" hypothesis is a financial statement assertion concerned with whether all the items in a population possess a specific property, such as the assertion that, "All items in the client's inventory are properly valued at lower of cost or market."

3

In accounting, an example of a "qualitative" hypothesis is a financial statement assertion concerned with whether a specific transaction satisfies the requirements for revenue recognition, such as that an "arms length" transaction has occurred or that the amount of the sale is realizable.

4

Since the purpose of this study is to develop an operational framework of the competence of evidential matter, the concept of background information is especially important since practical tasks are not performed in isolation.

5

While Hempel sees his three "phases" as the important steps in the confirmation process, he explicitly states that the phases do not "...necessarily occur in the order..."(1965, p.40) in which he lists them. Therefore, Hempel seems to consider the content of each phase as being more important than the ordering of the phases themselves.

6

Hempel views the first phase of confirmation as a process where individual observation reports are examined. Moreover, Hempel views the second phase of the model as a comparison between a "totality" of observation reports and a hypothesis. Therefore, the first phase of the process is a method for "screening"

individual observation reports for entrance into a "body" of observation reports. Hempel's approach is similar to the approach taken by Toba (1975) regarding audit evidence.

7

According to Hempel, the "empiricists" establish the "cognitive significance" of a sentence on the basis of direct observation. Moreover, Hempel asserts that the empiricists advocate "...that a sentence, to make an empirical assertion, must be capable of being borne out by, or conflicting with, phenomenon which are potentially capable of being observed directly" (1965, p.102).

8

According to Hempel, "empiricism" and "operationism" are closely related. However, "empiricists" are concerned with testing sentences through "...experiment or observation..." (1965 p. 123). "Operationists," however, are concerned with whether the terms in an "observation report can be "operationally defined." Furthermore, such operational definition can only be developed if two observers agree on the meanings of the terms in the statement (1965, p.127).

9

This discussion concerning "evidential support" is only intended to provide a general outline of this phase of the model. Since philosophers of science have proposed many concepts of confirmation, the final versions of the second and third phases of the model are described in a later section of the chapter.

10

Carnap's discussion of "relevant" and "absolute" evidence emphasizes the concept of confirmation (over disconfirmation).

11

Salmon uses the term "degree of confirmation" to convey the general idea that confirmation may be measured.

12

According to Salmon (Achinstein, 1983a, p. 96) and Achinstein (1983a, p. 159) the degree of confirmation, in order to be "high," should be close to "1." The issue of who determines whether confirmation is "high" is discussed later.

13

In the actual excerpt, Salmon's first parenthetical note refers to the "second" type of confirmation. Within the context of Salmon's work, "second" refers to his "relevance" form of confirmation. Also, Salmon's

second parenthetical note refers to the "first" type of confirmation. Within the context of Salmon's work, "first" refers to his "absolute" form of confirmation.

14 The concept of an "accumulation" of observation reports is similar to the legal concept of the "weight" of evidence.

15 The terms "negatively" and "positively" relevant are used to refer to the "relevance sense" of disconfirmation and confirmation, respectively.

16 In the model, disconfirmation is considered before confirmation in order to ensure that the observation report may not pass through the model without considering that the observation report may contradict the hypothesis.

17 The issue of how a hypothesis should be accepted is quite complex; therefore, no attempt is being made in this section to develop precise rules of accepting a hypothesis. Rather, the general guidelines in this section are only intended to serve as general rules which will be used in Chapter 5 to guide the type of decision an auditor should render concerning a financial statement assertion. Toba (1975) has also attempted to formulate such general guidelines.

18 The comparative form of confirmation measures the relative confirmatory powers of two different types of observation reports. According to Achinstein, (1983a, p.2) the comparative form of confirmation has not been widely discussed in the literature. For this reason, and because the current study focuses on the relationships between "evidential matter" and "hypotheses," this form of confirmation is not considered in detail.

19 In fact, Salmon (Achinstein 1983a, p.96) makes this distinction between Carnap's definitions of confirmation.

20 Salmon (1967, pp. 121-124) discusses three approaches to determining prior probabilities. The first method, "logical interpretation," views prior probability as "...a prior measure of possible states of affairs" (1967, p. 121). The second method, the "personalistic approach", defines prior probability in

terms of "...degrees of belief in the truth of statements" (1967, p. 121). Finally, the "frequency interpretation" approach defines prior probability in terms of "...the relative frequency with which an attribute occurs in an infinite sequence of events" (1967, p. 123). While these three approaches are quite different, each of them requires some degree of prior knowledge (background information).

21

The most basic concept of "explanation" is "causation." Using this definition, event "a" is said to "cause" event "b" if the occurrence of event "a" is the reason for the occurrence of event "b." An extensive discussion of causation may be found in Patterns of Discovery (Hanson, 1965).

22

Salmon (1966, pp. 65-96) provides an extensive discussion of various definitions of probability. All of these definitions are based on subjective and objective concepts of probability.

23

While this definition of "rationality" is somewhat ambiguous, a similar concept is the legal definition of "reasonable." Black (1979, pp. 1139) defines reasonable in the following manner:

Fair, proper, just, moderate, suitable under the circumstances. Fit and appropriate to the end in view. Having faculty of reason; under the influence of reason; agreeable to reason. Thinking, speaking, or acting according to the dictates of reason. Not immoderate or excessive, being synonymous with rational, honest, equitable, fair, suitable, moderate, tolerable.

This definition will be used throughout this study to describe "rational."

24

While the concept of rational (objective) probability seems to be most often applied to the absolute evidence, it may also be applied to relevant evidence. The issue concerning relevant evidence is concerned with how much the probability of a hypothesis must change in order for the observation report to be evidence. Considering the Spitz example, the fact the a frog has created ripples in the lake may increase the probability that Mark Spitz

will drown by one billionth. However, a rational individual would not consider this event to be evidence (that Mr. Spitz might drown). The fact that an alligator is chasing Spitz, though, would increase the probability by a larger degree and might be considered evidence by a "rational individual."

25

Braithewaite's example is based on a simplified version of acceleration tested by Galileo. Therefore, it does not conform with basic modern laws of physics.

26

Hypothetico-deductivism (H-D) has been criticized from two other aspects. First, some critics have argued that H-D is based on the unrealistic assumption that hypotheses are tested in isolation. Salmon (1983, p. 121) reiterates a "classic" example to demonstrate this criticism. The example consists of a simplified H-D system with two hypotheses. The highest level hypothesis states that, "Pigs have wings." However, in this instance, the hypothesis is formulated in conjunction with the observed initial condition that, "Pigs are good to eat." From the higher level hypothesis and initial condition, therefore, the lower level hypothesis of "Some winged things are good to eat" is deduced. Recall that, in Braithewaite's H-D account, if an observation confirms the lower level hypothesis in a system, then "...all the hypotheses in the system ..." (Braithewaite, 1959, p.13) are confirmed. Therefore, according to Salmon, (1983, p. 121), if we observe that "...such winged creatures as ducks and turkeys are good to eat..." then, since we have confirmed the lower level hypothesis that "Some things are good to eat," we have also confirmed the higher level hypothesis that, "Pigs have wings." A second criticism against the "H-D" account of evidence is that it does not account for the way in which the highest level hypothesis is initially formulated. This complaint has been stated by Hanson (1965, p.158) who argues that the only way to formulate the highest level hypothesis is through "retroductive reasoning" as described in Section 4.33.

27

While this step may be unrealistic in a scientific context, it is included in the model to represent the notion that there are certain events ("red flags") in an audit which should raise the auditor's level of "professional skepticism."

CHAPTER 5

A MODEL OF THE COMPETENCE OF EVIDENTIAL MATTER

5.0 Introduction

The purpose of this chapter is to place the model's philosophical foundation into an auditing context. This objective is accomplished through two means. First, some of the elements of the model's foundation, as described in Chapter 4, are directly adapted to an auditing context. Secondly, legal concepts of evidence are used to "translate" some of the philosophical concepts of evidence embodied in the model's foundation into an auditing context and to combine certain factors which affect evidential competence into standards which can be used to assess the competence of evidential matter across many audit situations.¹ The remainder of this chapter places the phases of the model, as summarized at the end of the previous chapter, into auditing form.

5.1 The Model's Inputs

Four inputs for the model's foundation were identified in Chapter 4. These inputs consisted of the

hypothesis, the researcher's background information, the observation gathered through the appropriate observation technique, and the observation report. Exhibit 5.1 (see page 114) shows the auditing equivalents of these inputs.² The philosophical versions of these inputs, as outlined in the previous chapter, are shown in parentheses.

Financial Statement Assertion (Node 0.1)

In the previous chapter, a "hypothesis" was defined as the proposition tested by the researcher in the experiment. In a similar manner, the auditor must identify a "financial statement assertion" to be tested. The Auditing Standards define a financial statement assertion as a "...representation by management...embodied in the financial statement components" (AU Section 326.05; AICPA, 1987) which the auditor verifies by evaluating evidential matter; a "financial statement assertion," therefore, like the "hypothesis,"³ is the proposition which is entered into the model.

Background Information (Node 0.2)

"Background information" has been defined as all the information available to the researcher prior to

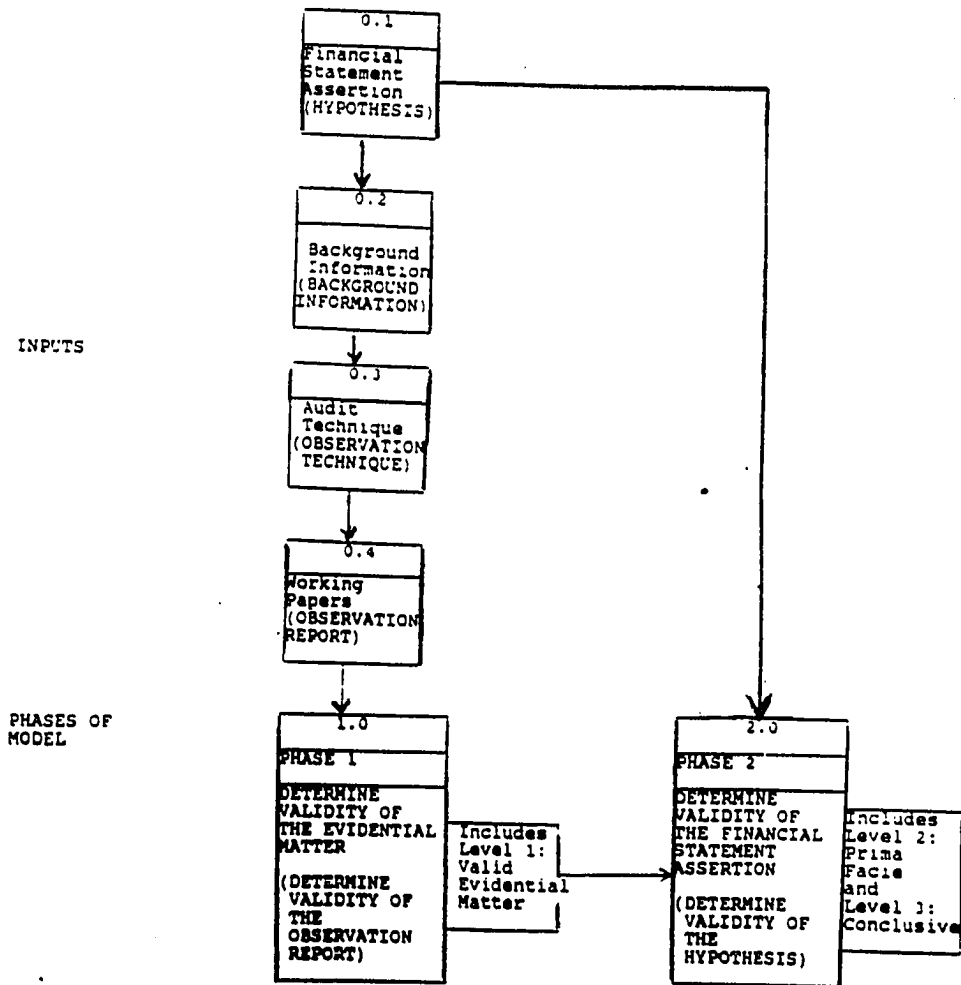


Exhibit 5.1: The General Process of the Model

conducting the experiment which is relevant toward performing the experiment and interpreting the results of the experiment. "Background information" consists of two elements: the researcher's professional training and the researcher's knowledge of the situational contingencies of the experiment. In a similar matter, "background information" in auditing includes the auditor's general knowledge of auditing obtained through professional training and experience and the auditor's knowledge of the situational contingencies of the audit.⁴ Regarding such contingencies, this information is gathered through such actions on the part of the auditor as performing an adequate investigation of internal control, communicating with a predecessor auditor, and other actions which aid the auditor in familiarizing himself with the circumstances of the engagement.

Audit Technique (Node 0.3)

"Observation techniques" have been defined as the methods used by researcher to gather observations. In an auditing context, the methods for gathering evidential matter are "audit techniques." Mautz (1962, p.100) provides a listing of "audit techniques," which include:

1. Physical examination and count
2. Confirmation

3. Examination of authoritative documents and comparison with record
4. Recomputation
5. Retracing bookkeeping procedures
6. Scanning
7. Inquiry
8. Examination of subsidiary records
9. Correlation with related information
10. Observation of pertinent activities and conditions.

Similar listings of "audit techniques" are provided in most auditing textbooks and certain research articles (Hylas and Ashton, 1982).

Working Papers (Node 0.4)

After the evidential matter is gathered, it must be recorded. The researcher's record of the evidential matter has been labelled as an "observation report." "Working Papers" constitute the auditor's record of the evidential matter; consequently, "working papers" is the final input (0.4) into the two-phased model.

Phases of the Model (Nodes 1.0 and 2.0)

As shown in Exhibit 5.1, the model consists of two phases. These phases are analogous to the two phases summarized at the end of the previous chapter. Also, three levels of evidence, which are discussed later, are embodied in the model. The purpose of the first phase of the model, which is labelled DETERMINE VALIDITY OF THE EVIDENTIAL MATTER, is to determine

whether the evidential matter is an adequate surrogate for the item it is supposed to represent. This phase of the model embodies the first level of evidence, "Valid Evidential Matter." The purpose of the second phase of the model, which is labelled DETERMINE VALIDITY OF THE FINANCIAL STATEMENT ASSERTION, is to determine the correctness of the financial statement assertion. This phase of the model embodies the second and third levels of evidence, "prima facie" and "conclusive" evidence, respectively. The next section presents a more detailed description of the model's phases.

5.2 An Overview of the Model's Phases

The model is based on the factors which affect the competence of evidential matter. The factors to be used in this study, which are discussed throughout the chapter, are listed in Exhibit 5.2 (see page 118). Many of these factors have been identified in the early literature (documented in Chapter 2) concerning the competence of evidential matter; a few of the factors, however, are added to the model or modified as the the model is developed.

The phases of the model are summarized in Exhibit 5.3 (see page 119). As shown in this exhibit, the model encompasses three levels of evidence. The first level of evidence is labelled "valid evidential matter." If

Directness (DIR)

The auditor has, through his own action, examined the item involved in the financial statement assertion.

Identification (ID)

The evidential matter has been identified with specific data in the accounting records.

Firmness (FIRM)

The evidential matter is not susceptible to manipulation, alteration, or counterfeiting.

Timeliness (TIM)

The evidential matter has been gathered at or near the financial statement date.

Audit Controls (AC)

The auditor has maintained complete control over the evidential matter without interference from the client.

Integrity (INT)

The evidential matter has originated and is controlled by a source that possesses professional integrity.

Independence (IND)

The evidential matter has originated and is controlled by a source which is not under the influence of the client's management.

Review (REV)

The working papers have been reviewed by an individual who is as technically qualified as the engagement auditor to audit the financial statement assertion.

Initial Relevance (IR)

Common sense determines that the type of evidential matter has the potential to decrease or increase the auditor's initial assessment of the audit risk associated with the financial statement assertion.

Negative Relevance (NR)

There are many instances of evidential matter which contradict the financial statement assertion.

Internal Control (IC)-

The auditor has examined the entire population or has expanded his audit procedures to consider an increased level of control risk.

Inherent Contingencies (INH)

The auditor has examined the entire population of items or has expanded his audit procedures to consider an increased level of inherent risk.

Objectivity (OBJ)

The evaluation of the evidential matter does not require a subjective judgment.

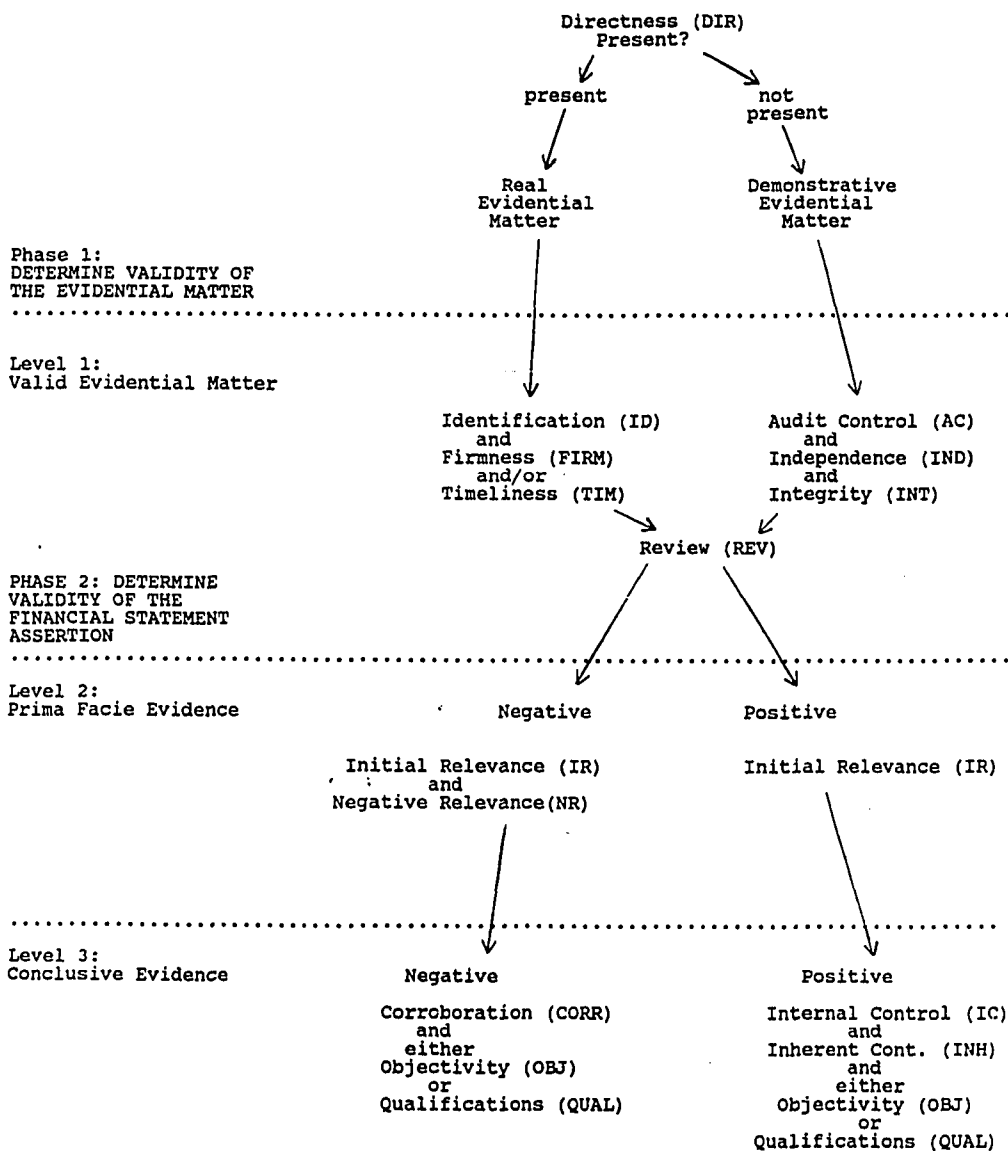
Qualifications (QUAL)

The factor of objectivity (OBJ) is not present and the evidential matter has been evaluated by an individual with the appropriate technical qualifications.

Corroboration (CORR)

The auditor has gathered more than one type of evidential matter which contradicts or supports the financial statement assertion.

Exhibit 5.2: Factors Affecting the Competence of Evidential Matter



* In this diagram, the factors must be present in order to reach the next level of evidence.

Exhibit 5.3: An Overview of the Model

this level of evidence is reached, the evidential matter is an accurate surrogate of the "real world" item it represents.

The second level of evidence is prima facie evidence. In a legal context, this type of evidence is defined as:

...evidence which, if unexplained or contradicted, is sufficient to sustain a judgment in favor of the issue which it supports, but which may be contradicted by other evidence(Black, 1979).

Therefore, if this level of evidence is reached, some degree of support exists for the auditor's conclusion concerning the financial statement assertion; however, the introduction of new evidential matter may still change this conclusion. Two types of prima facie evidence are used in the model. The first type, negative prima facie evidence, tends to contradict the financial statement assertion. From an opposite perspective, positive prima facie evidence tends to support the financial statement assertion.

The third level of evidence is conclusive evidence. In a legal context, this type of evidence is defined as:

...that which is incontrovertible, either because that law does not permit it to be contradicted, or because it is so strong and convincing as to overbear all proof to the contrary and establish the proposition in question beyond any reasonable doubt (Black, 1979, p.263).

If this level of evidence is reached, the conclusion reached on the financial statement assertion is so

strong that the introduction of new evidential matter cannot change it. Two types of conclusive evidence are used in the model. The first type, negative conclusive evidence, means that the evidence contradicting the financial statement assertion is so strong that the financial statement assertion must be rejected (deemed false). From an opposite perspective, positive conclusive evidence means that the evidence supporting the financial statement assertion is so strong that the assertion must be accepted (deemed true).

Exhibit 5.3 includes an overview of the sequence of factors needed to reach each of the levels of evidence. In order to reach the first level of evidence (valid evidential matter), the type of evidential matter must first be determined. Two types of evidential matter, labelled as "real" and "demonstrative," are used in the model. The evidential matter is considered real if the factor of directness (DIR) is present in the audit situation and demonstrative if the factor of directness (DIR) is not present. If the evidential matter is real, then the factors of identification (ID), firmness (FIRM) and/or timeliness (TIM), and review (REV) must be present in order for the first level of evidence, labelled "valid evidential matter," to be reached. If the evidential matter is demonstrative, all of the factors of audit control (AC), independence (IND), integrity (INT), and

review (REV) must be present in order for the first level of evidence to be reached.

Once the validity of the evidential matter is determined, the second phase of the model (DETERMINE VALIDITY OF THE FINANCIAL STATEMENT ASSERTION) is entered and the second and third levels of evidence, labelled "prima facie" and "conclusive" evidence, are determined. In order to obtain negative prima facie evidence, the factors of initial relevance (IR) and negative relevance (NR) must be present in the audit. In order to obtain positive prima facie evidence, only the factor of initial relevance (IR) must be present.

Additional factors are needed in order for the third level of evidence (conclusive evidence) to be reached. In order to obtain negative conclusive evidence, the factors of initial relevance (IR), negative relevance (NR), corroboration (CORR), and either qualifications (QUAL) or objectivity (OBJ), must be present in the audit. In order to obtain positive conclusive evidence, the factors of initial relevance (IR), inherent contingencies (INH), internal control (IC), and either qualifications (QUAL) or objectivity (OBJ) must be present in the audit. The rationale underlying the sequences of factors are now discussed.

5.3 First Level of Evidence: Valid Evidential Matter

The first level of evidence, labelled "valid evidential matter," is determined in the first phase of the model. The logic underlying this phase of the model is shown in Exhibit 5.4 (see page 124). The philosophical equivalents (from Chapter 4) of the model's elements are shown in parentheses. Two criteria are used for assessing the validity of evidential matter. Each of these criteria corresponds with one of methods for accepting observation reports presented in the previous chapter. The first criterion, labelled AUTHENTICITY, is analogous to the "verifiability" ("empiricist" criterion) requirement discussed in the previous chapter. The second criterion, labelled PROFESSIONAL AGREEMENT, is analogous to the "Professional Agreement" ("operationist" criterion) requirement discussed in the previous chapter. Prior to discussing these criteria, the two types of evidential matter used in the model must be defined.

5.31 Real and Demonstrative Evidential Matter (Node 1.1)

Exhibit 5.4 illustrates that two types of evidential matter, labelled "real" and "demonstrative", are embodied in the model. Each of these types of

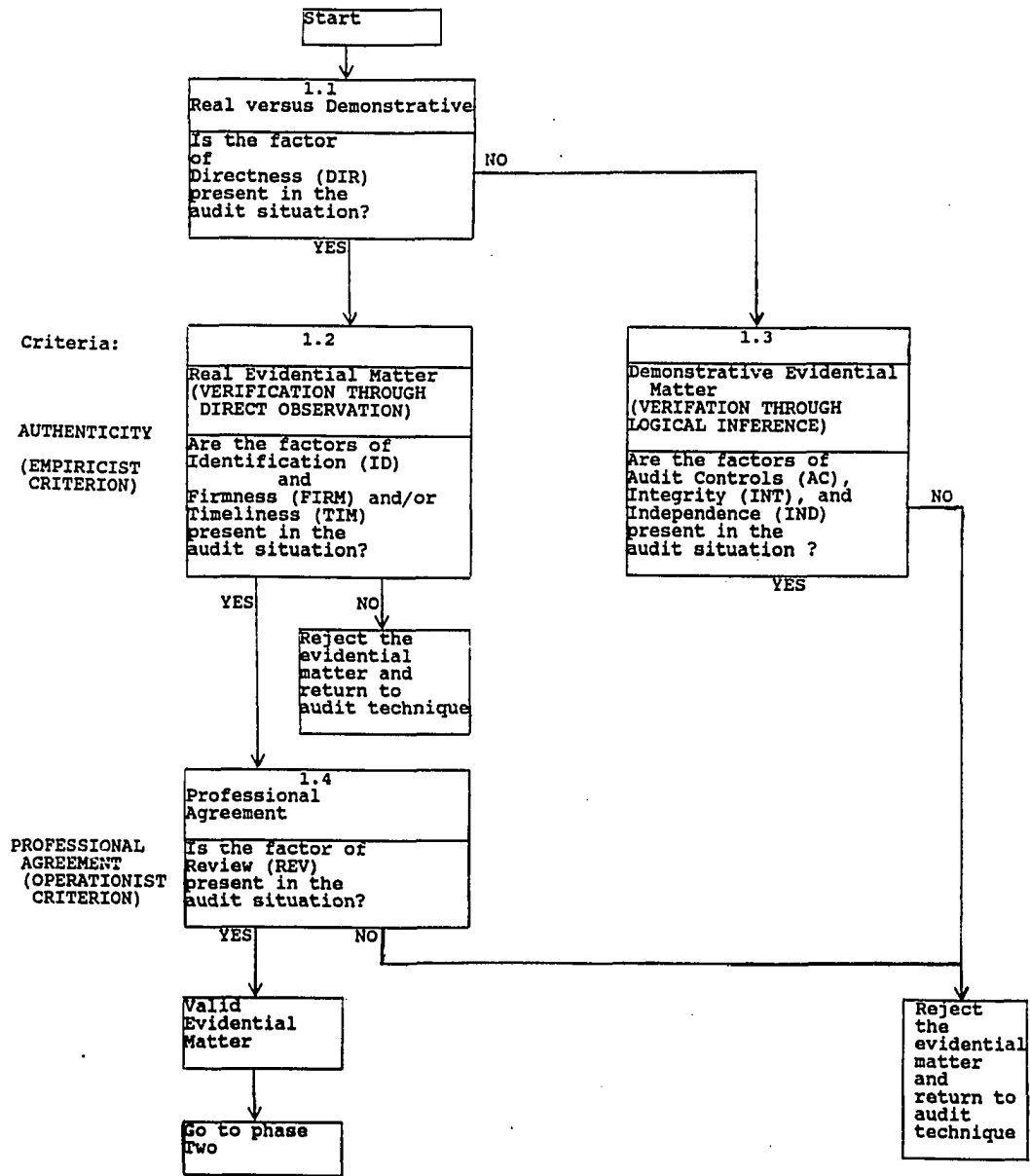


Exhibit 5.4: Phase One- Assess the Validity of Evidential Matter

evidential matter corresponds with one of the types of "verifiability" (the empiricist criterion) described in the previous chapter. Recall that, under the first type of "verifiability," a hypothesis is verified through the direct observation of an item embodied in the hypothesis. In the second type of "verifiability", a hypothesis is verified through "logical inference".

An example of verifiability through "direct observation" was provided in the previous chapter by considering the proposition, "it rained last night." Under verifiability through "direct observation," this proposition is verified by actually observing the rainfall in the nighttime. In this case, the evidential matter (the observation of falling water) consists of an item embodied in the hypothesis, the "rain." Furthermore, as an example of verifiability through "logical inference," the same proposition ("it rained last night") is verified by waking up in the morning, noticing water on the ground, and inferring that, "it rained last night." In this instance, the evidential matter (the observation of water on the ground) indirectly represents an item embodied in the hypothesis (the rainfall).

The verification of hypotheses through "direct observation" and "logical inference" are similar to the legal concepts of real evidential matter and demonstrative evidential matter, respectively. In law,⁵ "real" evidential matter refers to "... tangible items

...originally involved in the litigated occurrence" (Lilly, 1987, p.511). Like "verification" through "direct observation," "real" evidential matter consists of an item directly involved in the proposition.

"Demonstrative" evidential matter, however, "...is...employed to indicate those tangible items (such as maps, diagrams, or models) not directly involved in the litigated occurrence, but subsequently constructed or obtained by the parties to illustrate (demonstrate) their factual contentions or help the jury understand the case" (Lilly, 1987, p.511).

"Demonstrative" evidential matter, like verification through "logical inference," consists of a surrogate which indirectly represents the item involved in the proposition.

5.32 Criterion 1: Authentication of Evidential Matter

The distinction between "real" and "demonstrative" evidential matter is important because different factors must be present for each of these types of evidential matter to satisfy the criterion of AUTHENTICITY. Within this context, the legal definition of authenticity may be used. That is, evidential matter may be considered authentic if it is:

Genuine; true; real; pure; reliable;
trustworthy; having the character and
authority of an original...competent,
credible, and reliable as evidence.
(Black, 1979)

The methods for authenticating evidential matter are now described.

5.321 Authentication of Real Evidential Matter (Node 1.2)

In an auditing context, real evidential matter may be considered analogous to items involved in a financial statement assertion, which themselves constitute the evidential matter. In discussing the nature of real evidential matter in auditing, Kissinger (1974, p.98) states that it is gathered through audit techniques which require the auditor to perform a direct comparison of the accounting records (the financial statement assertion) with the actual item represented by the financial statement assertion. This same perspective of real evidential matter is taken in this study. Examples of real evidential matter include a direct observation by the auditor of a fixed asset in order to verify its existence; a count of petty cash in order to verify its amount; or a direct review of public records in order to verify the client's ownership of property. In the present model, therefore, the evidential matter is real if the factor of directness (DIR) is present in the audit situation. As shown in Exhibit 5.2, this factor is present if the "...auditor has, through his own action, examined the item involved in the financial statement assertion."

Regarding the authentication of real evidential matter, in a legal context, this type of evidential matter must comply with two requirements in order to be authenticated. First, the proponent of real evidential matter must show that the evidential matter "...played a part in the controversy...that the thing offered is the same item involved in the litigated transaction" (Lilly, 1982, p. 418). Secondly, "...the proponent should elicit testimony that the proffered thing has not changed substantially since the time of its involvement in the controversy" (Lilly, 1982, p. 418).

These same criteria may be used in auditing to authenticate real evidential matter. Regarding the first requirement, the auditor should demonstrate that the evidential matter recorded in the working papers is an observation of the same item embodied in the financial statement assertion. Regarding the second requirement, the auditor should demonstrate that the item involved in the financial statement assertion (represented by the evidential matter) has not changed substantially between the time the evidential matter is gathered and the date of the audit opinion.

The auditor, in order to satisfy the first requirement, must demonstrate that the item he has observed is the same item embodied in the financial statement assertion. For example, if the auditor has inspected a fixed asset, he should ensure that it is

the same asset represented in a financial statement assertion which purports that that specific asset exists. In order to ensure that the evidential matter satisfies this criterion, the auditor must be able to trace the fixed asset back into the accounting records and, eventually, to the financial statements; therefore, the evidential matter satisfies this first criterion if the factor of identification (ID) is present in the audit situation. As indicated in Exhibit 5.2, the factor of identification (ID) is present in the audit situation if the evidential matter recorded in the working papers has been "...identified with specific data in the accounting records."

In addition to ascertaining that the evidential matter is the same item involved in the financial statement assertion, the auditor must also demonstrate that the item represented by the evidential matter has not changed between the time it has been evaluated and the date of audit opinion (the second requirement). This requirement can be satisfied if the factor of firmness (FIRM) is present in the audit situation. This factor aids in the satisfaction of this requirement because if the evidential matter is not susceptible to manipulation, the probability that it may be altered between the time it is evaluated and the financial statement date is diminished. As shown in Exhibit 5.2, firmness (FIRM) is present in the audit situation if

the evidential matter is not "...susceptible to manipulation, alteration, or counterfeiting."

In addition to firmness (FIRM), the presence of a second factor, timeliness (TIM), may also aid in ensuring that the evidential matter has not changed substantially between the time of examination and the financial statement date. The presence of this factor decreases the possibility that the evidential matter has not changed between the date of its evaluation and the financial statement date simply by correlating these two dates. As shown in Exhibit 5.2, timeliness (TIM) is present in the audit situation if "...the evidential matter is gathered at or near the financial statement date."

In accordance with the preceding discussion, as shown in Exhibit 5.4, if the factors of directness (DIR) and firmness (FIRM) and/or timeliness (TIM) are present in the audit situation, real evidential matter is authenticated. The criterion of "Professional Agreement" is then examined. However, if any of the factors of identification (ID) and firmness (FIRM) and/ or timeliness (TIM) are not present in the audit situation, the evidential matter is rejected and new evidential matter must be sought.

5.322 Authentication of Demonstrative Evidential
Matter (Node 1.3)

In addition to real evidential matter, evidential matter may also be demonstrative. To reiterate, in a legal context, demonstrative evidential matter "...is...employed to indicate those tangible items (such as maps, diagrams, or models) not directly involved in the litigated occurrence, but subsequently constructed or obtained by the parties to illustrate (demonstrate) their factual contentions or help the jury understand the case" (Lilly, 1987. p.511). In auditing, therefore, the concept of demonstrative evidential matter may be considered analogous to evidential matter which indirectly represents (is a surrogate for) the item involved in the financial statement assertion. A confirmation of an account receivable, for example, is not directly involved in a financial statement assertion; rather, the confirmation form represents the item involved in the financial statement assertion: the recorded receivable on the customer's accounting records. In Exhibit 5.4, therefore, evidential matter is demonstrative when factor of directness (DIR) is not present in the audit situation.

Since evidential matter is demonstrative when the factor of directness (DIR) is not present in the audit

situation, it is gathered through audit techniques which involve a third party.⁶ The involvement of a third party means that demonstrative evidential matter encompasses two important facets. First, demonstrative evidential matter passes (physically) between at least two parties. Secondly, the evidential matter originates from a source other than the auditor.

The auditor must ensure that these two facets of demonstrative evidential matter do not increase the possibility of errors in the evidential matter. That is, the auditor must ensure that the evidential matter does not contain errors that are caused by the passing of the evidential matter between many parties. Also, the auditor should ensure that the evidential matter does not contain errors that are caused by the source of the evidential matter.

The Federal Rules of Evidence include two provisions intended to minimize errors in evidential matter caused by these factors. The first rule, known as "hearsay," is concerned with minimizing errors caused by the passing of evidential matter between many parties. The second rule, known as "impeachment," is concerned with minimizing errors caused by the source of the evidential matter (the witness).

Regarding the first provision, "hearsay" involves a serial communication where one person, the witness, transmits what another person, the declarer, has stated

on a previous occasion (Lilly, 1987, p. 120). Lilly (1987, p.120), lists four "dangers" which make hearsay less reliable than direct testimony. These four dangers are labelled "sincerity," "mistransmission," "perception," and "memory." "Sincerity" means that the witness has not conveyed the truth to the judge or jury. "Mistransmission" means that the witness's statement is ambiguous or incomplete. "Perception" means that the witness has not heard the original statement accurately. Finally, "memory" means that the witness has forgotten part of the original statement or observation. Because of these "dangers," hearsay is generally not admissible as evidential matter toward determining a verdict.

In an auditing context, the dangers of "hearsay" are analogous to the increased opportunity for errors and irregularities in evidential matter that passes through many entities (on an indirect basis). In law, for example, the error of mistransmission occurs because the witness has misunderstood the meaning of a statement made by another. In a somewhat analogous manner, an accounting clerk of a client may not understand the information that the auditor is requesting on a confirmation form. Also, regarding the danger of sincerity, the witness may purposely distort what another individual has stated. In auditing, the client may misrepresent the value of an item.

The principal factor which may aid the auditor in avoiding the dangers of hearsay is audit controls (AC). This factor reduces the probability of such errors by minimizing the number of entities which handle the evidential matter. For example, if the auditor keeps the proper physical control over inventory counting tags, errors due to the handling of the tags by client personnel can be minimized. As shown in Exhibit 5.2, the factor of audit controls (AC) is present in the audit situation if "...the auditor has maintained complete control over the evidential matter without interference from the client."

In addition to minimizing errors caused by the indirect nature of demonstrative evidential matter, the auditor should also attempt to minimize errors caused by the source of the evidential matter. In law, the Federal Rules of Evidence contain a provision for minimizing such errors. This provision, known as "impeachment," is concerned with the credibility of the source of the evidential matter (the witness). Impeachment generally involves the introduction of evidential matter "...aimed at discrediting the testimony of a witness..."(Lilly, 1987, p. 337).

Lilly (1987, pp.342-360) outlines two ways by which an attorney may impeach a witness. ⁸ First, the attorney may impeach a witness by demonstrating that the witness's testimony is not credible due to the "bad

character" of the witness. For example, the witness may have been previously convicted of a crime or may have committed another "bad act." Secondly, the attorney may impeach a witness by demonstrating that the witness is bias. Lilly (1987, p.358) emphasizes that bias is often caused by close relationships between the witness and one of the parties involved in the litigation:

The term bias denotes a variety of mental attitudes that may cause a witness to give false or misleading testimony. In general, it signifies a witness's interest in the outcome of the case, including a friendly or hostile association with one of the parties that could induce him to color, distort, or falsify his testimony.

In an auditing context, as in law, the evidential matter must originate from a source which is credible. In addition, evidential matter in auditing must also be controlled by a credible entity.⁹ Therefore, in auditing, the methods for impeaching evidential matter include impeachment by establishing the "bad character" or bias of the entity which is the source of the evidential matter and which controls the evidential matter.

Consequently, impeachment of evidential matter in auditing may be avoided if certain of the factors which affect the competence of evidential matter are present in the audit situation. First, impeachment of evidential matter through "bad character" can be avoided if the factor of integrity (INT) is present in the audit situation. Regarding the factor of integrity

(INT), as shown in Exhibit 5.2, this factor is present in the audit situation if the evidential matter has originated and is controlled by a source "...that possesses professional integrity."

In addition, impeachment of evidential matter through bias can be avoided if the evidential matter has originated and is controlled by entities which are independent of the client. Consequently, as shown in Exhibit 5.4, impeachment through bias can be avoided if the factor of independence (IND) is present in the audit situation. Regarding this factor, in Exhibit 5.2, this factor is present in the audit situation if the evidential matter, "...has originated and is controlled by entities which are not under the influence of the client's management."

In accordance with the discussion concerning demonstrative evidential matter, as shown in Exhibit 5.4 (Node 1.3), demonstrative evidential matter can be authenticated if three of the factors which affect the competence of evidential matter are present in the audit situation. First, in order to avoid the dangers of "hearsay," the factor of audit controls (AC) must be present in the audit situation. Second, in order to avoid "impeachment," the factors of integrity (INT) and independence (IND) must be present in the audit situation. Finally, if any one of these factors is not present in the audit, the auditor must search for new evidential matter.

5.34 Criterion 2: Professional Agreement (Node 1.4)

In addition to the criterion of AUTHENTICITY, the evidential matter, in order to be considered valid, must also satisfy the criterion of PROFESSIONAL AGREEMENT. In the previous chapter, "Professional Agreement" was concerned with whether the evidential matter is considered reasonable and comprehensible by an individual who possesses professional training which is comparable to that of the individual who has gathered and evaluated the evidential matter.

In law, one mechanism for obtaining PROFESSIONAL AGREEMENT is represented by the judge's review of the evidential matter "as a whole." In this review, the judge makes a preliminary review of the evidential matter to in order determine if, on the basis of the evidential matter, the "...jury could find for either of the contending parties" (Lilly, 1987, p.454). If the judge decides that the evidential matter is adequate, the process of adjudication begins. However, if the judge decides that the evidential matter is not adequate, one of the attorneys must search for new and or additional evidential matter.

In a similar manner, in auditing, one method for obtaining PROFESSIONAL AGREEMENT is for the evidential matter (working papers) to be reviewed by an individual with professional training similar to that

of the engagement auditor. Therefore, the criterion of PROFESSIONAL AGREEMENT is satisfied if the factor of review (REV) is present in the audit situation. As indicated in Exhibit 5.2, the factor of review (REV) is present if the working papers have been reviewed by "...an individual who is as technically qualified as the engagement auditor to audit the financial statement assertion." If such an individual agrees that the evidential matter in the working papers is comprehensible and reasonable, then the competence of the evidential matter has been enhanced and the evidential matter is deemed valid. In this instance, as shown in Exhibit 5.4, the second phase of the model is entered. However, if the factor of review (REV) is not present in the audit, new evidential matter must be obtained.

5.4 Levels Two and Three of Evidence: Prima Facie and Conclusive Evidence

The second and third levels of evidence are determined in the second phase of the model. In the previous chapter, this phase was separated into four steps. In the first step, labelled EXAMINE BACKGROUND INFORMATION, background information is examined in order to determine if there are any "surprising events" which should cause the researcher to revise his

hypothesis and to determine the prior probability associated with the hypothesis. In the second step, labelled DETERMINE RELEVANCE, a determination is made concerning whether the observation report decreases the prior probability of the hypothesis (in the case of negative relevance) or increases the prior probability of the hypothesis (in the case of positive relevance). In the third step, labelled DETERMINE EVIDENTIAL SUPPORT, the observation report is added to total bodies of observation reports in order to determine whether there are sufficient observation reports in order to confirm that the hypothesis is not true (in the case of ABSOLUTE DISCONFIRMATION) or true (in the case of ABSOLUTE CONFIRMATION). In the final step, labelled DECIDE ON HYPOTHESIS, a decision is made concerning the disposition of the hypothesis. If ABSOLUTE DISCONFIRMATION has been obtained, the hypothesis is rejected (is deemed false). If ABSOLUTE CONFIRMATION is obtained, the hypothesis is accepted (is deemed true). However, if neither of these types of evidence is obtained, judgement on the hypothesis is suspended until more observation reports can be obtained. As shown in Exhibit 5.5 (see page 140), these same four steps are included in the present model. Once again, the philosophical equivalents of the model's elements are shown in parentheses.

Exhibit 5.5 is in Appendix Four

5.41 Step 1: Examine Background Information

The first step in determining evidential support is to consider the hypothesis in light of the background information. This step is represented in Exhibit 5.5 by the region labelled EXAMINE BACKGROUND INFORMATION.

The purpose of this step is twofold. First, this step is performed in order to assess whether there are any "surprising elements" of background information which require the researcher to revise the hypothesis. Secondly, this step is performed in order to determine the prior probability of the hypothesis. Each of these objectives is now considered in an auditing context.

5.411 Surprising Events

Regarding the first objective, in auditing, the concept of "surprising" events is analogous to the discovery of circumstances ("red flags") which require the auditor to raise his level of professional skepticism. Regarding such professional skepticism, the Codified Statement on Auditing Standards (AICPA, 1988a, para. 16) state that an auditor should maintain a high level of professional skepticism throughout the audit:

An audit of financial statements in accordance with generally accepted auditing standards should be planned and performed with an attitude of professional

skepticism. The auditor neither assumes that management is dishonest nor assumes unquestioned honesty. Rather, the auditor recognizes that conditions observed and evidential matter obtained, including information from prior audits, need to be objectively evaluated to determine whether the financial statements are free of material misstatement.

The Standards also emphasize (AICPA, 1988a, para. 18-21) that circumstances may arise in either the planning stages or performance of the audit which may require the auditor to increase his level of professional skepticism.¹⁰ If such circumstances arise, the auditor should expand the scope of his audit procedures (AICPA, 1988a, para. 21).

The current model, like the Auditing Standards, requires an expansion of the audit procedures. This expansion of audit procedures is represented by the node in Exhibit 5.5 which directs the auditor to "search for corroborating evidential matter." Within this context, the legal definition of corroborating evidence, which emphasizes the type of evidential matter, is used:

Evidence supplementary to that already given and tending to strengthen or confirm it. Additional evidence of a different character to the same point (Black, 1979, p.311).

An example of corroborating evidential matter may be provided by considering a financial statement assertion representing that inventory is properly valued at the lower of cost or market. The auditor, in

his preliminary investigation of inventory, may notice through an analytical review that certain items of inventory are selling slowly. This review might indicate that the inventory is obsolete. In this case, the auditor should search for corroborating evidential matter, such as an examination of specific inventory items, in order to ascertain whether the inventory is not obsolete.

5.412 Determine Prior Probability

After an examination is made for "surprising" events, background information is also examined in order to determine the "prior probability" of the financial statement assertion. In an auditing context, this determination of prior probability is analogous to the auditor's initial determination of audit risk. According to the Codified Statements on Auditing standards (AICPA, 1987, AU Section 312.20) audit risk consists of two general components:

(a) the risk (control risk and inherent risk) that the balance or class of transactions contains errors that could be material to the financial statements when aggregated with errors in other balances of classes of transactions, and;

(b) the risk (detection risk) that the auditor will not detect such error.

Since this stage of the model is concerned with assessing the likelihood of a misstatement in the

financial statement assertion, the first component of audit risk (control risk and inherent risk) is important.¹⁰ Therefore, as shown in Exhibit 5.5, the determination of the "prior probability" involves determining the likelihood that the financial statement assertion is misstated.

5.42 Step 2: Determine Relevance

After the background information is examined, specific types of validated evidential matter (from phase one) are entered into the model in order to determine their relevance. Two types of relevance, labelled "initial relevance" and "negative relevance" in Exhibit 5.5, are embodied in the model.

5.421 Initial Relevance (IR)

In Chapter 4, an observation report was deemed relevant if a "rational individual" would consider the observation report capable of changing the prior probability of the hypothesis. This concept of relevance is virtually identical to the legal definition of relevance. For example, Rule 401 of the Federal Rules of Evidence states that:

Relevant evidence means evidence having any tendency to make the existence of a fact that is of any consequence to the determination of the action more probable or less probable than it would be without the evidence (Lilly, 1978, p.451).

Therefore, like the concept of philosophical concept of relevance, legal relevance is concerned with whether the evidential matter has the potential to change the probability of the proposition.

Lilly (1987, p.27), in describing how legal relevance is determined, states that the test of relevance:

...involves no more than a common sense determination, made in the light of human observation and experience, that certain events or conditions either are causally connected or normally associated with other events or conditions....relevance is an affair of experience in logic, and not at all of law.

Considering these aspects of relevance, in law, the relevance of evidential matter is determined by whether common sense determines whether the evidential matter has the potential to change, in either direction, the prior probability of the proposition in question.¹¹

A similar definition is used in the current model to define the factor or initial relevance (IR). As indicated in Exhibit 5.2, this factor is present in the audit situation if "...common sense determines that the type of evidential matter has the potential to decrease

or increase the auditor's initial assessment of the audit risk associated with the financial statement assertion." ¹² As an example, while confirmation of accounts receivable would be relevant toward determining the existence of such accounts, it would not be relevant toward determining the collectibility of the accounts. As shown in Exhibit 5.5, if the factor of initial relevance (IR) is present, the next step is to determine whether the factor of negative relevance is present. ¹³ However, if initial relevance (IR) is not present, the evidential matter is discarded.

5.422 Negative Relevance (NR)

After the initial relevance of the evidential matter is determined, the negative relevance (NR) of the evidential matter is examined. In the previous chapter, an observation report was negatively relevant (NR) if it increased the auditor's initial assessment of audit risk (the likelihood that the financial statement is materially misstated). In the present model, as indicated in Exhibit 5.2, the factor of negative relevance (NR) is present in the audit situation if "...there are many instances of evidential matter which contradict the financial statement assertion." For example, the auditor may receive many receivable confirmations which differ from the amounts recorded on the books.

According to the Codified Statements on Auditing Standards (AICPA, 1988a, para. 9), if there are many instances of evidential matter which contradict the financial statement assertion, the auditor should expand his procedures. In Exhibit 5.5, this expansion of audit procedures is represented by the node which directs the auditor to search for corroborating evidential matter. Within this context, corroborating evidential matter is defined as in the preceding section.

5.43 Step 3: Determine Evidential Support

After the type of evidential matter is examined for relevance, as in the previous chapter, it is added to a total body of evidential matter in order to determine if absolute disconfirmation or absolute confirmation has been obtained. In Exhibit 5.5, this step is labelled DETERMINE EVIDENTIAL SUPPORT. One of the bodies of evidential matter, labelled NEGATIVE EVIDENCE, contradicts the financial statement assertion. The other body of evidential matter, labelled POSITIVE EVIDENCE, supports the financial statement assertion. As in the philosophical version of the model, two criteria are embodied in these bodies of evidential matter. The first criterion, which is labelled the "probability" requirement, states that, given the evidential matter (e) and the background

information (b), there must be a "high probability" that the hypothesis is not true (negative evidence) or true (positive evidence). The second criterion, which is labelled the "rationality" requirement, states that a "rational man" would attribute the high probability of the hypothesis to the evidential matter. These criteria are now adapted to an auditing context; subsequently, they are discussed within the context of positive and negative evidence.

5.431 The Probability Requirement

The probability requirement is concerned with whether there is sufficient evidential matter to ensure a high probability that the financial statement assertion is true. Since this requirement is concerned with the sufficiency of evidential matter, in its purest form, it is outside the scope of this work. From a peripheral standpoint, however, the concept of audit risk is related to this criterion. Audit risk (AICPA, 1987) is composed of two components. The first type of audit risk is concerned with the likelihood that the financial statements (through the financial statement assertion) are materially misstated. The second component, however, is concerned with the likelihood that the auditor's procedures will not detect such material misstatements.

The first type of audit risk, itself, is comprised of control risk and inherent risk. Control risk is the risk, "...that error that could occur in an account balance or class of transactions and that could be material, when aggregated with other errors in other balances or classes, will not be prevented or detected on a timely basis" (AICPA, 1987, Section, 312.20) by the client's internal control system. Inherent risk, however, is the risk of "...the susceptibility of an account balance or class of transactions to error that could be material, when aggregated with error in other balances or classes, assuming that there were no related internal accounting controls" (AICPA, 1987, Section 312.20). Inherent risk is caused by characteristics of the client's management, the client's operations or industry, or the engagement (AICPA, 1988a, Section 327.10).

According to the Codified Statement on Auditing Standards (AICPA, 1988b, section 320.38; AICPA, 1988a, section 327.14), when large degrees of either control risk or inherent risk are present, the auditor should expand his audit procedures in order to compensate for the high levels of risk. In expanding his audit program to compensate for such increased risk, the auditor is attempting to avoid the second component of audit risk (detection risk) that his "...audit procedures may not detect a material misstatement" (AICPA, 1988, Section

312.20). Therefore, when the auditor expands his audit procedures to compensate for control risk or inherent risk, he is effectively expanding the sufficiency of evidential matter in order to ensure a high probability that the financial statement assertion is correct. Consequently, the expansion of audit procedures to consider control risk and inherent risk constitutes an action on the part of the auditor to satisfy the probability requirement.

In accordance with this discussion, the probability criterion is satisfied if both of the factors of internal control (IC) and inherent contingencies (INH) are present in the audit situation. As shown in Exhibit 5.2, the factor of internal control (IC) is present in the audit situation if "...the auditor has either examined the entire population or has expanded his audit procedures to consider an increased level of control risk." ¹⁵ Also, the factor of inherent contingencies (INH) is present in the audit situation if "...the auditor has either examined the entire population or has expanded his audit procedures to consider an increased level of inherent risk."

5.432 The Rationality Requirement

In addition to the probability requirement, evidential matter must also satisfy the criterion of

rationality. To reiterate, this requirement states that a "rational" individual would have reason to believe that the high probability of the financial statement assertion (the hypothesis) has been caused by the evidential matter. In a legal context, this criterion is similar to the concept of expert testimony.

The Federal Rules of Evidence (Rule 701; Lilly, 1987, p. 555) state that witnesses are generally only allowed to submit "facts" as evidence; that is, witnesses are only allowed to submit testimony that is "objective" in nature and which does not incorporate an "inference" (an opinion). One type of witness who is allowed to submit a subjective inference (an opinion) is an "expert." Regarding expert testimony, Rule 702 of the Federal Rules of evidence states that (Lilly, 1987, p.386):

If scientific, technical, or specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of a opinion or otherwise.

Moreover, such an expert is allowed to submit inference as evidential matter because, "By definition...an expert possesses knowledge and skill that distinguish him from an ordinary witness. Presumably, he is in a position superior to other trial participants, including the jury, to draw inferences and reach conclusions within his field of expertise" (Lilly, 1987, p. 483). Prior to submitting an opinion as

evidence, however, an individual must be qualified as an "expert" by the court. According to Rule 702 of the Federal Rules of Evidence, (Lilly, 1988, p.556) the qualification of an expert is made on the basis of the expert's knowledge, skill, experience, training, or education.

In an auditing context, as in law, it may be presumed that a technically qualified individual is in a superior position to make inferences which require specialized knowledge or skills than an individual without such expertise. If a technically qualified individual makes such an inference, there is a greater likelihood that the individual has a logical reason to believe that the proposition is supported by the evidential matter.

In accordance with the legal view of expert testimony, in order to satisfy the "rationality" requirement, either of the factors of objectivity (OBJ) or qualifications (QUAL) must be present in the audit situation. As shown in Exhibit 5.2 the factor of objectivity (OBJ) is present in the audit situation if "...the evaluation of the evidential matter does not require a subjective judgment." Also, the factor of qualifications (QUAL) is present in the audit situation if "...the factor of objectivity (OBJ) is not present and the evidential matter has been evaluated by an individual with the appropriate technical

qualifications." The probability and rationality criteria are now discussed within the context of positive and negative evidence.

5.433 Negative Evidence

The next issue addressed pertains to the roles played by the probability and rationality criteria in determining the type of evidence. Negative evidence is considered first. Considering the probability requirement, within the context of negative evidence, this criterion states that there must be a high probability that the financial statement assertion (hypothesis) is not true, in the presence of the evidential matter and background information.

This requirement is concerned with the sufficiency of evidential matter. In an auditing context, however, if only the sufficiency of evidential matter is considered, the probability criterion is difficult to adapt to evidence which contradicts the financial statement assertion. The simple absence from an audit situation of one of the factors (internal control (IC) or inherent contingencies (INH)) which determine the adequacy of the sufficiency of evidential matter (the probability criterion) does not prove that the financial statement assertion has been conclusively falsified. For example, a failure on the part of the

auditor to adequately expand his audit procedures to consider increased control risk does not absolutely disconfirm a financial statement assertion. Consequently, in the model presented in Exhibit 5.5, within the context of negative evidence, the probability criterion is satisfied if the factor of corroboration (CORR) is present in the audit situation. As shown in Exhibit 5.3, the factor of corroboration (CORR) is present in the audit situation if "...the auditor has obtained more than one type of evidential matter which contradicts or supports the financial statement assertion." Therefore, the probability requirement (for negative evidence) is satisfied if the auditor has gathered more than one type of evidential matter which contradicts the financial statement assertion.

An example of how corroborating evidential matter is used in determining negative evidence may be provided by considering a financial statement assertion which represents that a client's accounts receivable are correctly valued at net realizable value. First, the auditor, in his investigation of background information, may discover that the client is in poor financial condition. This would constitute a "surprising event" from background information which would require the auditor to search for corroborating evidential matter. Subsequently, in his confirmation of

receivables, the auditor may discover many confirmations which differ from the amounts recorded on the books. These two pieces of information, considered together, would mean that the factor of corroboration (CORR) was present in the audit situation.

In addition to the probability criterion, the rationality criterion must also be considered for negative evidence. This requirement is satisfied if evidential matter requiring a subjective evaluation is evaluated by an individual with the appropriate technical qualification. Therefore, as shown in Exhibit 5.5, the rationality criterion is satisfied if either of the factors of objectivity (OBJ) or qualifications (QUAL) are present in the audit situation.

Regarding the level of evidence obtained, if both the probability and rationality requirements are met, then conclusive negative evidence is obtained. That is, the evidence contradicting the financial statement assertion is so strong that the financial statement assertion must be rejected. However, if either one of these criteria is not satisfied, negative prima facie evidence is obtained. That is, the evidence tends to contradict the financial statement assertion, but the introduction of new evidential matter may still change this conclusion.

5.434 Positive Evidence

Regarding the concept of positive evidence, the probability criterion is applied as described earlier. Therefore, as shown in Exhibit 5.5, the probability requirement is satisfied if the factors of internal control (IC) and inherent contingencies (INH) are present in the audit situation. Also, as stated earlier, the rationality criterion is satisfied if either of the factors of objectivity (OBJ) or qualifications (QUAL) are present in the audit situation.

Regarding the level of evidence, if both the probability and rationality requirement are met, then positive conclusive evidence is obtained. That is, the support for the financial statement is so strong that the financial statement assertion must be accepted as correct. However, if either one of these criteria is not satisfied, positive prima facie evidence is obtained. That is, the evidence tends to support the financial statement assertion, but the introduction of new evidential matter may still change this conclusion.

5.5 Step 4: Decide on the Financial Statement Assertion

In the fourth step of the model, a decision must be made concerning the disposition of the financial

statement assertion. This step is represented in Exhibit 5.5 by the region labelled DECIDE ON FINANCIAL STATEMENT ASSERTION. If negative conclusive evidence is obtained, the evidence contradicting the financial statement assertion is so strong that the assertion is automatically rejected (is deemed false). However, if positive conclusive evidence is obtained, the assertion is automatically accepted (is deemed true). However, if neither negative nor positive conclusive evidence is obtained, prima facie evidence is obtained, and the introduction of new evidential matter may change the type of support provided by the evidential matter for the financial statement assertion. In the case of prima facie evidence, judgment on the financial statement assertion is suspended until corroborating evidential matter can be obtained.

5.6 Summary of the Model

A summary of the entire model, in terms of the sequence of factors, is provided in Exhibit 5.6. (see page 158). As shown in this exhibit, the final model is separated into three general components. The first component consists of the model's inputs, which include the financial statement assertion, the background information, the audit technique (audit program), and the auditor's working papers. The second component is the model's first phase, which is labelled DETERMINE

Exhibit 5.6 is in Appendix Four

THE VALIDITY OF EVIDENTIAL MATTER. The first level of evidence, labelled VALID EVIDENTIAL MATTER, is determined in this phase. Two types of evidential matter, labelled REAL and DEMONSTRATIVE are used in this phase. If the factor of directness (DIR) is present, the evidential matter is considered to be real. However, if the factor of directness (DIR) is not present, the evidential matter is considered demonstrative.

Two criteria are subsequently used to determine the validity of evidential matter. The first criterion is labelled AUTHENTICITY. For real evidential matter, this criterion is satisfied if the factors of identification (ID), and firmness (FIRM) and/or timeliness (TIM) are present. For demonstrative evidential matter, this criterion is satisfied if the all of the factors of audit control (AC), independence (IND), and integrity (INT) are present in the audit situation. The second criterion for assessing validity is PROFESSIONAL AGREEMENT. This criterion is satisfied, for both types of evidential matter, if the factor of review (REV) is present in the audit situation. If either of the two criteria are not satisfied, new evidential matter must be obtained. However, if both of these criteria are met, the first level of evidence (valid evidential matter) is obtained and the final phase of the model is entered.

The final phase of the model is labelled DETERMINE THE VALIDITY OF FINANCIAL STATEMENT ASSERTION. The second and third levels of evidence, which are respectively labelled PRIMA FACIE and CONCLUSIVE, are determined in this phase of the model. The second level of evidence (Prima Facie) means that the conclusion concerning the financial statement assertion can be changed by the introduction of new evidential matter. Negative prima facie evidence means that the evidential matter tends to contradict the financial statement assertion. Positive prima facie evidence means that the evidential matter supports the financial statement assertion. Negative prima facie evidence is obtained if both of the factors of initial relevance (IR) and negative relevance (NR) are present in the audit situation. Positive prima facie evidence is obtained if only initial relevance (IR) is present in the audit situation. If either of the types of relevance is not obtained, the evidential matter is irrelevant and should be discarded.

The third level of evidence is conclusive evidence. If this level is reached, the conclusion concerning the financial statement assertion is so firm that the introduction of new evidential matter will not change it. Negative conclusive evidence is reached if the factors of corroboration (CORR) and either

objectivity (OBJ) or qualifications (QUAL) are present. Positive conclusive evidence is obtained if the factors of internal control (IC), inherent contingencies (INH), and either objectivity (OBJ) or qualifications (QUAL) are present in the audit situation. If conclusive evidence is not obtained, then prima facie evidence is obtained.

Finally, a decision is made concerning the correctness of the financial statement assertion. If negative conclusive evidence has been obtained, the financial statement assertion is rejected (deemed false). If positive conclusive evidence is obtained, the financial statement assertion is accepted (deemed true). Finally, if conclusive evidence is not obtained, judgement on the financial statement assertion is suspended until more evidential matter can be obtained.

5.7 Conclusion

This chapter has adapted the model's foundation, as developed in Chapter 4, into an auditing context. The primary means for placing the model into an auditing context has been the application of legal concepts of evidence. The model is operationalized in the next chapter.

Endnotes

1

Legal rules of evidence are used in the chapter to develop consistent standards of evidential competence. Evidence rules are used by courts to determine whether evidential matter is admissible toward determining a verdict. An example of one of these rules is the concept of "hearsay." The legal profession recognizes that indirect testimony in which a witness recounts the observation, statements, or experiences of another individual is less reliable than the direct testimony of the individual who provided the original statement or encountered the original experience (Lilly, 1987, p.180). Because such indirect testimony lacks reliability, the legal profession has established a "hearsay" rule which prevents indirect testimony from being admitted as evidence in court (Lilly, 1987, p.180). In addition to the "hearsay rule," many other rules of evidence exist for determining whether evidential matter is admissible toward determining a verdict. In general, different legal jurisdictions are empowered to establish their sets of evidence rules; recently, however, there has been a movement in law toward the use of a uniform set of evidence rules by all legal jurisdictions. Therefore, as of 1987, 30 states had adopted the evidence rules used by United States District Courts, known as the Federal Rules of Evidence, for their own jurisdictions (Lilly, 1987, p. xxv). Because the Federal Rules of Evidence are widely accepted, they will be used in this chapter to develop the model.

2

General definitions for the model's elements are provided in this chapter. More exact definitions are discussed in Chapter 6.

3

The Codified Statements on Auditing Standards (AICPA, 1987, AU Section 326) outline five types of financial statement assertions. These assertions include such representations by management as, that assets are correctly valued, that all the items on the financial statements are shown in accordance with generally accepted accounting principles, and other representations by management which must be verified by the auditor in order to assess the correctness of the financial statements.

4

Implicit in this definition of background information is the notion that background information includes not only information which is obtained before commencing fieldwork, but also information which is obtained during fieldwork but prior to the investigation of the

specific financial statement assertion. Background information includes information concerning: a) the quality of the client's internal control; b) the client's management; c) client's operations and industry; d) the engagement itself.

5

The concepts of verification through direct observation or logical inference are similar to other legal definitions of evidence. For example, inference through logical inference is similar to the legal concept of circumstantial evidence. Black (1979, p.22) defines circumstantial evidence as:

Testimony not based on actual personal knowledge or observation of facts in controversy, but on other facts from which deductions are drawn indirectly about the fact to be proved.

Therefore, circumstantial evidence, like verification through logical inference, is based on a "logical deduction" by observing facts not involved in the controversy. In spite of some similarities between the two types of verification and various types of legal evidence, the concepts of "real" and "demonstrative" evidential matter are used because the first phase of the model emphasizes the authenticity of evidential matter. Moreover, the Federal Rules of Evidence (Section 901) use these concepts of evidence ("real and demonstrative") to develop the rules for authenticating evidential matter.

6

Since directness (DIR) in the present study is defined as evidential matter which is collected on a "firsthand" basis by the auditor, the absence of this factor necessarily means that the evidential matter has been gathered through a third party.

7

The dangers or "hearsay" are similar to Mautz's "dangers of evidence," as described in Chapter 2.

8

The Federal Rules of Evidence contain a third provision for impeaching evidential matter. This provision, known as "prior inconsistent statements," examines whether statements made by a witness on a previous occasion (such as a statement to the police) contradict the witness's testimony under oath. This provision has no apparent importance in an auditing context.

9 As stated in Chapter 2, Stettler (1954) emphasizes the important role played by the entity controlling the evidential matter in determining the "competence of evidential matter."

10 The second component of audit risk, detection risk, is considered in a later stage of the model.

11 Salzburg and Redden (1977) provide an example of a "common sense" test for ascertaining relevance. This test is similar to the "retroductive" type of reasoning discussed in the previous chapter. The test involves the application of two rules:

It may be helpful for the Trial Judge to focus on two factors: (1) the likelihood the evidence would exist if the proposition at issue is true; (2) the likelihood the evidence would exist if the material proposition is false. If the evidence is as likely to exist when the proposition is true as in the cases where the proposition is false, it tends to prove nothing. The greater the likelihood that evidence exists in cases where the proposition is true as compared to the cases where it is not true, the greater the importance (probative value) of the evidence and the more significant it seems to be.

12 Within this context, "common sense" is somewhat similar to the concept of a "rational man."

13 In the present model, no test is made for positive relevance. Moreover, if the evidential matter has the potential to change the initial audit risk, it is presumed to be positively relevant.

14 The examination of all of the items in a population automatically ensures that sufficient evidential matter has been collected. Therefore, this element is included in the definitions of both Internal Control (IC) and Inherent Contingencies (INH).

15

The model is designed so that corroboration (CORR) for absolute disconfirmation can be obtained from either the background information or a combination of background information and the evidential matter.

CHAPTER 6

OPERATIONALIZING THE MODEL

The purpose of this chapter is to operationalize the model summarized at the end of Chapter 5.¹ The model is operationalized to the extent possible on the basis of Statements on Auditing Standards which have been promulgated by the Auditing Standards Board. The chapter is separated into three sections. In the first section, the inputs to the model are operationalized. The second section discusses the first level of evidential matter, valid evidential matter. The final section of the chapter operationalizes the second and third levels of evidence, prima facie and conclusive evidence.

6.1 The Model's Inputs

The general process of the model is shown in Exhibit 6.1 (see page 167). Four inputs to the model have been identified. The first and second inputs consist of the financial statement assertion (0.1) and the auditor's background information (0.2). The third input is the observation made by the auditor which is gathered through the appropriate audit technique (0.3). The final input is the evidential matter recorded in

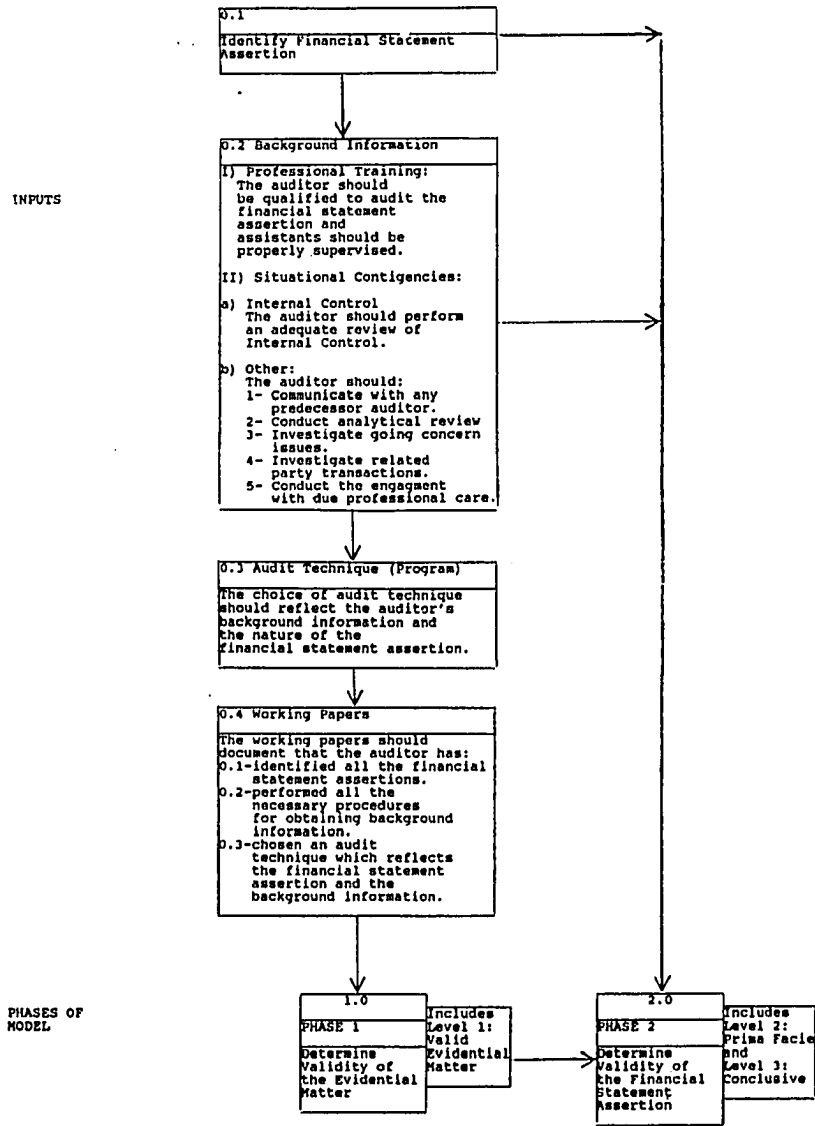


Exhibit 6.1: The Model's Inputs

the auditor's working papers (0.4). These inputs, which are discussed below, effectively constitute procedures which the auditor should perform prior to investigating the financial statement assertion.

Financial Statement Assertion (0.1)

A financial statement assertion is defined as a "...representation by management which the auditor verifies by evaluating evidential matter."

The Codified Statements on Auditing Standards (AICPA, 1987, Section 326) provide five financial statement assertions. These assertions include:

Existence or Occurrence- whether assets or liabilities of the entity exist at a given date and whether recorded transactions have occurred during a given period of time (AU Section 326.04).

Completeness- whether all transactions and accounts that should be presented in the financial statements are so included (AU Section 326.05).

Rights and Obligations- whether assets are the rights of the entity and liabilities are the obligations of the entity at a specific date (AU Section 326.06).

Valuation or Allocation- whether asset, liability, revenue, and expense components have been included in the financial statements at appropriate amounts. (AU Section 326.07)

Presentation and Disclosure- whether particular components of the financial statements are properly classified, described and disclosed. (AU Section 326.08)

Regardless of the specific financial statement assertion, the important procedure concerning this input is that the auditor must identify all the financial statement assertions associated with a specific account. Without such identification, the auditor's investigation of the financial statement assertion is obviously incomplete.²

Background Information (0.2)

The auditor's background information is comprised of two elements:

1. Professional Training

The auditor's previous training and experience.

2. Situational Contingencies

The auditor's knowledge of the circumstances of the engagement obtained through preliminary investigation.

Certain sections of the Codified Statements on Auditing Standards provide details for these components

of background information. The details of background information, which are summarized in Exhibit 6.1, include:

1. Professional Training

As required by the first standard of fieldwork, the auditor should possess the requisite training and experience in order to enable him to competently audit the financial statement assertion. Also, if an inexperienced assistant is investigating the financial statement assertion, the assistant should be properly supervised.

2. Situational Contingencies

The auditor should perform certain procedures in order to obtain information about the specific audit situation which may be relevant toward verifying the financial statement assertion. These procedures, which embody the requirements in certain Statements on Auditing Standards, include:

a. Internal Control

As required by the second standard of fieldwork, the auditor should obtain an adequate knowledge of the client's internal control through "...previous experience with the entity and procedures such as inquiries of appropriate management, supervisory, and staff personnel; inspection of entity documents and records; and observation of entity activities and operations" (AICPA, 1988b, para. 23).

b. Other Situational Contingencies

The auditor should perform general procedures for acquainting himself with the characteristics of the client's management, the operations and industry of the client, or the engagement which may result in "...errors or irregularities whose effect, individually or in the aggregate, is important enough to cause them not to be presented fairly in conformity with generally accepted accounting principles (AICPA, 1987,

Section 312.04). As summarized in Exhibit 6.1, these procedures include:

1. Predecessor Auditor

Communicate with a predecessor auditor concerning "Facts that might bear on the integrity of management; on disagreements with management as to accounting principles, auditing procedures, or other similarly significant matters; and on the predecessor's understanding as to the reasons for the change of auditors" (AICPA, 1987, Section 315.06).

2. Analytical Review

Conduct analytical review on a preliminary basis and throughout the engagement in order to enhance the "...auditor's understanding of the client's business and the transactions and events that have occurred since the last audit date and ...identifying areas that may represent specific risks relevant to the audit" (AICPA, 1988c, para 6).

3. Going Concern

Perform the necessary audit procedures in order to identify conditions or events (such as working capital deficiencies) which may indicate that the client does not have the ability to continue as a going concern (AICPA, 1988d).

4. Related Party Transactions

Inquire into the possibility of "related party transactions" if the circumstances of the engagement indicate that such transactions may exist. Examples of these circumstances include borrowing or lending money at below market interest rates, selling real estate at a price that differs significantly from its appraised value, and other circumstances which indicate that the client may have engaged in related party transactions (AICPA, 1987, Section 334.03).

³
5. Due Care

Perform procedures in order for the engagement to be conducted with Due Professional Care.

Audit Technique (0.3)

An "audit technique" is defined as the method used by the auditor to gather the evidential matter. The important aspect of this input is that the auditor's choice of audit techniques, and the ordering of these techniques, must reflect the entire set of background information possessed by the auditor. Therefore, as shown in Exhibit 6.1, the audit program should reflect the background information and the nature of the financial statement assertion.⁴

Working Papers (0.4)

The final input to the model consists of the evidential matter recorded in the auditor's working papers. The Codified Statements on Auditing Standards (AICPA, 1987, Section 339.03) emphasize two important facets of working papers. First, the Standards provide a broad definition of working papers:

Working papers are records that are kept by the auditor of the procedures applied, the tests performed, the information

obtained, and the pertinent conclusions reached in the engagement. Examples of working papers are audit programs, analyses, memoranda, letters of confirmation, and representations.

Also, the Standards (AICPA, 1987, Section 339.05) state that working papers should fully document that the auditor has satisfied the three standards of field work:

The work has been adequately planned and supervised, indicating observance of the first standard of fieldwork.

The system of internal accounting control has been studied and evaluated to the degree necessary to determine whether, and to what extent, other audit procedures are to be restricted, indicating observance of the second standard of fieldwork.

The audit evidence obtained, the auditing procedures applied, and the testing performed have provided sufficient competent evidential matter to afford a reasonable basis for an opinion, indicating observance of the third standard of fieldwork.

These two facets of working papers are embodied in the model. First, working papers are seen as encompassing all of the documentation underlying an audit. Secondly, working papers should document that the auditor has performed all of the appropriate procedures in the audit; therefore, as shown in Exhibit 6.1, the working papers should document that the auditor has:

1. identified all the relevant financial statement assertions related to a specific account (input 0.1).

2. followed all of the procedures outlined above for obtaining background information (input 0.2).

3. chosen audit techniques which reflect the background information unique to the engagement and the nature of the financial statement assertion (input 0.3).

6.2 Level One: Valid Evidential Matter

After the procedures related to inputs are performed, the first level of evidence is determined. The operationalized version of this phase of the model is shown in Exhibit 6.2 (see page 177). The first step is to ascertain whether the evidential matter is real or demonstrative.

6.21 Real and Demonstrative Evidential Matter

The evidential matter is considered "real" if the factor of directness (DIR) is present in the audit situation. If this factor is not present, the evidential matter is considered "demonstrative."

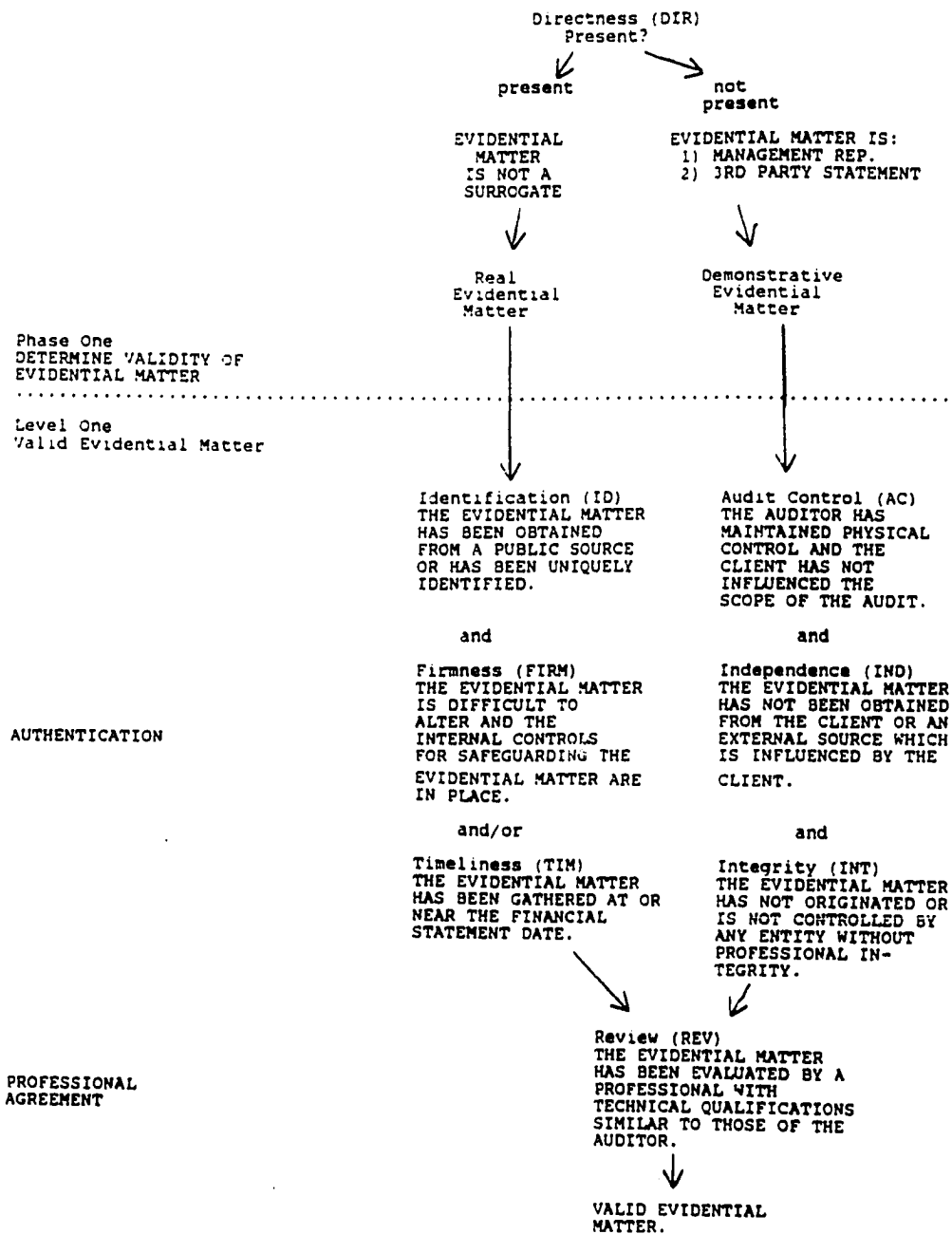


Exhibit 6.2: Level One of Evidence-Valid Evidential Matter

Directness (DIR)

The factor of directness (DIR) is present in the audit situation if "...the auditor has, through his own action, examined the item involved in the financial statement assertion." This factor, therefore, cannot be present if the evidential matter is a surrogate for the item involved in the financial statement assertion.

Two types of surrogates may be defined. The first type of surrogate is a management representation. These representations may involve either explicit representations (such as statements by officers or employees of the client) or implicit representations (such as information which has been obtained from the records of the client). As an example of an implicit representation, the auditor, in verifying whether a percentage of completion calculation is accurate, may use cost data derived from client records. In this situation, the auditor is essentially accepting the representation that the cost information is accurate. The second type of surrogate involves information obtained from third parties, which include confirmations or any other data obtained from parties external to the client, such as appraisals and legal opinions.

In accordance with this discussion, the factor of directness (DIR) is present in the audit situation and the evidential matter is "real" if the evidential

matter is not comprised of any of the following surrogates:

1. Management Representations
 - a. Explicit Management Representations,
such as statements by officers or employees of the client.
 - b. Implicit Management Representations,
such as calculations which are based on client supplied data.
2. 3rd Party Statements, such as confirmations or appraisals.

6.22 Criterion 1: Authentication

The next step is to authenticate the evidential matter. Real and demonstrative evidential matter must satisfy different sets of criteria in order to be authenticated. The requirements for authenticating each of these types of evidential matter are now discussed.

6.221 Authentication of Real Evidential Matter

"Real" evidential matter is authenticated if the factors of identification (ID) and firmness (FIRM)

and/or timeliness (TIM) are present in the audit situation. The factor of identification (ID) increases the likelihood that the evidential matter in the working papers is an observation of the element item involved in the financial statement assertion. In addition, the factors of firmness (FIRM) and timeliness (TIM) increase the likelihood that the element in the financial statement assertion has not changed substantially between the time at which the evidential matter is gathered and the date of the financial statements.

Identification (ID)

Identification (ID) is present in the audit if the evidential matter recorded in the working papers has been "...specifically identified with the data in the financial statement records." The auditor may identify the evidential matter through two methods.

First, the auditor may obtain the evidential matter from a public source, such as a newspaper.⁵ For example, the auditor may obtain the market value of securities (on a specific date) from the Wall Street Journal. In this case, the evidential matter in the work papers is the item involved in the financial statement assertion.

Secondly, the auditor may identify the evidential matter by correlating it with a characteristic unique

to the element embodied in the financial statement assertion. For example, if the auditor is investigating a financial statement assertion which purports that a specific piece of equipment exists, he may identify the equipment by matching a unique characteristic of the equipment (recorded in the financial statement records), such as a serial number, with the serial number recorded on that piece of equipment. This serial number should then be recorded in the working papers. In accordance with this discussion, as shown in Exhibit 6.2, the factor of identification (ID) is present in the audit situation if:

1. The auditor has obtained the evidential matter from a public source, or;⁵
2. The auditor has specifically identified the evidential matter in the working papers with a characteristic unique to the item involved in the financial statement assertion.

Firmness (FIRM)

If the evidential matter is "real," in addition to identifying (ID) the evidential matter, the auditor must also ensure that the item represented by the

evidential matter has not changed substantially between the date it is gathered and the financial statement date. The presence of firmness (FIRM) and/or timeliness (TIM) decreases the likelihood that items represented by the evidential matter have changed.

Regarding firmness (FIRM), this factor is present in the audit situation if the evidential matter is "...not susceptible to manipulation, alteration, or counterfeiting." Such susceptibility to manipulation may be considered a function of two characteristics of the audit situation:

1. the susceptibility of the particular type of evidential matter to manipulation, and;
2. the internal controls for safeguarding the evidential matter.

Regarding the first characteristic, certain types of evidential matter (such as cash) are more susceptible to manipulation than other types of evidential matter (such as bank documents). Regarding the second characteristic, evidential matter which is properly safeguarded is (obviously) more difficult to manipulate. In accordance with these two characteristics of the audit situation, as shown in exhibit 6.2, the factor of firmness (FIRM) is present in the audit situation if:

- 1) The form of the evidential matter is difficult to alter. Such forms of evidential matter may consist of large assets, such as property plant and equipment; or formal documents, such as bank statements, or;
- 2) The internal controls for safeguarding the evidential matter are in place.

Timeliness (TIM)

In addition to firmness (FIRM), the auditor may also ensure that the evidential matter has not changed if the factor of timeliness (TIM) is present in the audit situation. Regarding this factor, the evidential matter has been gathered on a "timely" basis if is gathered at or near the financial statement date. As shown in Exhibit 6.2, this definition of timeliness (TIM) is used in this study.

6.222 Authentication of Demonstrative Evidential Matter

If the evidential matter is demonstrative, the auditor may authenticate it by ascertaining whether the

factors of audit control (AC), integrity (INT), and independence (IND) are present in the audit situation. The factor of audit control (AC) aids in minimizing the possibility of error caused by the passing of evidential matter between many parties. Also, the factors of integrity (INT) and independence (IND) help ensure that the evidential matter is not controlled and has not originated from entities which possess a "bad character" or which are bias, respectively.

Audit Control (AC)

The factor of audit controls (AC) is present in the audit situation if "...the auditor has maintained complete control over the evidential matter without interference from the client." The auditor may lose control over the evidential matter in two ways. First, the auditor may lose physical control over the evidential matter; for example, he may allow the client to mail confirmations. Secondly, the auditor may lose control over his audit procedures. For example, at the client's insistence, the auditor may not send confirmation forms to certain parties. Therefore, as shown in Exhibit 6.2, the factor of audit controls (AC) is present in the audit situation if:

1. The auditor has maintained physical control over the evidential matter, such as maintaining control over inventory tags, and;
2. The auditor has not permitted the client to influence the scope of his audit procedures.

Integrity (INT) and Independence (IND)

In addition to avoiding errors which are caused by the passing of evidential matter between many parties, when the evidential matter is demonstrative, the source of the evidential matter may be impeached because it possesses "bad character" or because it is biased. Impeachment, however, can be avoided if both of the factors of integrity (INT) and independence (IND) are present in the audit situation. Regarding these factors, the auditor must examine both the entities which control the evidential matter and the entities from which the evidential matter has originated. Within the context of this study, evidential matter may be considered as having originated in an entity if it is derived from records, tangible property, knowledge or transaction of that entity. Additionally, evidential

matter may be considered as "controlled" by an entity if the evidential matter is physically controlled by that entity or the information content of the evidential matter has been verified with that entity.

Integrity (INT)

Integrity (INT) is present in the audit situation if the evidential matter has originated and is controlled by a source "...that possesses professional integrity." There are two mechanisms by which the auditor may ensure that this factor is present in the audit. First, the auditor may uncover a characteristic of the client's management in his investigation for background information which demonstrates that the client lacks professional integrity. Secondly, if the auditor is using the work of a specialist, according to the Codified Statement on Auditing Standards (AICPA, 1987, Section 336.05), the auditor must "...investigate the reputation of the specialist in the view of his peers and others familiar with this capability or performance." In conducting such an investigation, the auditor may find information which indicates that the specialist lacks professional integrity. Therefore, as indicated in Exhibit 6.2, the factor of integrity (INT) is not present in the audit situation if:

1. The auditor has performed a thorough search for background information and has investigated the work of any specialist, and;
2. the auditor has not uncovered any indications that the evidential matter has not originated or is not controlled by an entity which does not possess professional integrity.

Independence (IND)

Independence (IND) is present in the audit situation if the evidential matter "...has originated and is controlled by a source which is not under the influence of the client's management." The entities from which the evidential matter has originated and which control the evidential matter may be categorized on the basis of whether they are internal or external to the client's organization. Examples of "internal" entities include employees and managers or officers of the client. Examples of "external" entities include third parties who possess on-going business relationships with the client (such as customers vendors and creditors); professionals who possess a fiduciary relationship with the client; or investors in

the client. Therefore, as indicated in Exhibit 6.2, the factor of independence (IND) is present in the audit situation if the evidential matter has not originated or is not controlled by two general types of entities:

1. Internal entities- officers or employees of the client.
2. External entities- Outside entities whose interests coincide with those of the client.

6.23 Criterion 2: Professional Agreement

After the evidential matter has been authenticated, it must also satisfy the criterion of PROFESSIONAL AGREEMENT. This criterion is satisfied if the factor of review (REV) is present in the audit situation. Review (REV) is present if the evidential matter has been "...reviewed by an individual who is as technically qualified as the engagement auditor." Therefore, for example, this factor is present in the audit situation if the working papers have been reviewed by a "concurring" partner.

An important facet of review (REV) is that it is only intended to serve as a general reexamination of the evidential matter gathered by the auditor. This

factor is not concerned with the specific technicalities of financial statement assertions. For example, if the engagement auditor has consulted another auditor who is a technical specialist concerning the specific financial statement assertion, the factor of review (REV) is not considered present until a third auditor, such as a concurring partner, has reviewed the documented evidential matter supporting the financial statement assertion.⁶

6.3 Levels Two and Three: Prima Facie and Conclusive Evidence

Once a determination is made concerning whether the evidential matter is valid, the next two levels of evidence are examined. The second and third levels of evidence have been labelled "Prima Facie" and "Conclusive" evidence, respectively. The factors needed to reach each of these levels of evidence are described in Exhibit 6.3 (see page 190).

6.31 Level Two: Prima Facie Evidence

If Prima Facie Evidence is obtained, some degree of support exists for the financial statement assertion. However, the introduction of new evidential matter may change any conclusions concerning the validity of that

Phase Two: DETERMINE
VALIDITY OF THE
FINANCIAL STATEMENT
ASSERTION



VALID EVIDENTIAL
MATTER

Level Two:
Prima Facie Evidence

Negative

Positive

*If prima facie
evidence is not
obtained, the
evidential matter is
irrelevant and should
be discarded.

Initial Relevance (IR)
COMMON SENSE DETERMINES
THAT THE EVIDENTIAL MATTER
HAS THE POSTENTIAL TO
CHANGE THE AUDIT RISK
ASSOCIATED WITH THE
FINANCIAL STATEMENT
ASSERTION.

Initial Relevance (IR)
COMMON SENSE DETERMINES
THAT THE EVID. MATTER
HAS THE POTENTIAL TO
CHANGE THE AUDIT RISK
ASSOCIATED WITH THE
FINANCIAL STATEMENT
ASSERTION.

and

Negative Relevance (NR)
THERE ARE MANY INSTANCES
OF EVIDENTIAL MATTER WHICH
CONTRADICT THE FINANCIAL
STATEMENT ASSERTION.



Level Three:
Conclusive Evidence

Negative

Positive

Corroboration (CORR)
ADDITIONAL EVIDENTIAL
MATTER HAS BEEN OBTAINED
IN RESPONSE TO NEGATIVE
RELEVANCE OR BACKGROUND
INFORMATION WHICH SHOULD
RAISE THE AUDITOR'S
LEVEL OF PROFESSIONAL
SKEPTICISM.

Internal Control (IC)
and
Inherent Cont. (INH)
THE SAMPLE HAS BEEN EX-
PANDED, THE EVIDENTIAL
MATTER HAS BEEN OBTAINED
NEAR THE FINANCIAL STATE-
MENT DATE, OR CORR-
OBORATING EVIDENTIAL
MATTER HAS BEEN OBTAINED
IN ORDER TO COMPENSATE
FOR HIGH LEVELS OF
CONTROL OR INHERENT
RISK; OR, THE ENTIRE
SAMPLE OF EVIDENTIAL
MATTER HAS BEEN EXAMINED

and
either

Objectivity (OBJ)
THE EVIDENTIAL MATTER
DOES NOT ENTAIL A(N)
1) FUTURE ESTIMATE
2) ESTIMATE OF VALUE
3) APPLICATION OF RULES

and
either

Objectivity (OBJ)
THE EVIDENTIAL MATTER
DOES NOT ENTAIL A(N)
1) FUTURE ESTIMATE
2) ESTIMATE OF VALUE
3) APPLICATION OF RULES

or

Qualifications (QUAL)
THE INDIVIDUAL EVAL-
UATING THE EVIDENTIAL
MATTER IS TECHNICALLY
QUALIFIED AND THE
AUDITOR HAS UNDERSTOOD THE
ASSUMPTIONS UNDERLYING THE
EVALUATION.

or

Qualifications (QUAL)
THE INDIVIDUAL EVAL-
UATING THE EVIDENTIAL
MATTER IS TECHNICALLY
QUALIFIED AND THE
AUDITOR HAS UNDERSTOOD
THE ASSUMPTIONS
UNDERLYING THE EVALUA-
TION.



Reject the financial
statement assertion



Accept the financial
statement assertion

*If conclusive evidence is not obtained, judgement on the
financial statement assertion should be suspended and
corroborating evidential matter should be sought.

Exhibit 6.3: Levels Two and Three of
Evidence-Prima Facie and Conclusive

assertion. Negative prima facie evidence contradicts the financial statement assertion whereas positive prima facie evidence supports the financial statement assertion. As shown in Exhibit 6.3, both of the factors of initial relevance (IR) and negative relevance (NR) must be present in order to obtain negative prima facie evidence. If only the factor of initial relevance (IR) is present, "positive prima facie" evidence is obtained. If neither of these factors is present, the evidential matter is considered irrelevant and is discarded. The factors for determining prima facie evidence are now discussed.

Initial Relevance (IR)

The factor of initial relevance (IR) is present if "...common sense determines that a type of evidential matter has the potential to decrease or increase the auditor's initial assessment of the audit risk associated with the financial statement assertion." As illustrated in Exhibit 6.3, this same definition of initial relevance is used in the present model.

Negative Relevance (NR)

The evidential matter is negatively relevant (NR) if there are many instances of that type of evidential

matter which contradict the financial statement assertion. The Codified Statement on Auditing Standards (AICPA, 1988a, Para. 18) provide certain examples of such contradictions:

Analytical procedures disclose significant difference from expectation.

Significant unreconciled differences between reconciliations of a control account and subsidiary records or between a physical count and a related account are not appropriately investigated and corrected on a timely basis.

Confirmation requests disclose significant differences or yield fewer responses than expected.

Transactions selected for testing are not supported by proper documentation or are not appropriately authorized.

Supporting records or files that should be readily available are not promptly produced when requested.

Audit tests detect errors that were apparently known to client personnel, but were not voluntarily disclosed.

As promulgated in the Standards, contradictions of the financial statement assertion are used in the model to define the factor of negative relevance (NR).

6.32 Level Three: Conclusive Evidence

Once prima facie evidence is obtained, the next level of evidence is "conclusive" evidence. If this level of evidence is reached, the contradiction or support provided by the evidential matter for the

financial statement assertion is so strong that no amount of additional evidential matter can change the conclusion concerning the financial statement assertion. Negative conclusive evidence irrefutably falsifies the financial statement assertion. Positive conclusive evidence irrefutably verifies the financial statement assertion. As shown in Exhibit 6.3, negative conclusive evidence is obtained if the factors of corroboration (CORR) and either objectivity (OBJ) or qualifications (QUAL) are present in the audit situation. However, positive conclusive evidence is reached if the factors of internal control (IC), inherent contingencies (INH), and either objectivity (OBJ) or qualifications (QUAL) are present in the audit situation.

6.321 Negative Conclusive Evidence

Three factors must be present in the audit situation in order for Negative Conclusive Evidence to be obtained. These factors include corroboration (CORR), and either objectivity (OBJ) or qualifications.

Corroboration (CORR)

Corroboration (CORR) is present if "...the auditor has gathered more than one type of evidential matter

which contradicts or supports the financial statement assertion." Moreover, according to the logic of the model, corroborating evidential matter should be obtained under two conditions.⁷ First, corroborating evidential matter should be obtained if the factor of negative relevance, as previously defined, is present. Secondly, corroborating evidential matter should be obtained if there are circumstances in background information which require the auditor to raise his level of professional skepticism. Regarding professional skepticism, the auditing standards provide examples of occurrences related to both "internal control" and the "other situational contingencies" which should cause the auditor to raise his level of professional skepticism and search for corroborating evidential matter.

For internal control, the Codified Statements on Auditing Standards (AICPA, 1988e, p.7) outline certain weaknesses of the client's internal control system which should raise professional skepticism. Examples of these weaknesses include:

Deficiencies in the Control Structure Design including:

Inappropriate Segregation of Duties;
Absence of appropriate reviews and approvals of transactions; and
Inadequate procedures for applying accounting principles.

Failures in the Operation of the Control Structure:

Evidence of failure of identified controls in preventing or detecting misstatements of accounting information.

Evidence that a system fails to provide complete and accurate output consistent with the entity's control objectives because of the misapplication of control procedures.

Evidence of intentional override of the internal control structure by those in authority to the detriment of the overall objectives of the system.

Other

Absence of a sufficient level of control consciousness within the organization.

Failure to follow up and correct previously identified control structure deficiencies.

For other situational contingencies, the Codified Statement on Auditing Standards provide a listing of circumstances (other than the quality of the client's internal control) which should raise professional skepticism and which consist of characteristics of the client's management, the client's operations of industry, or the engagement. Examples of these circumstances include (AICPA, 1988a, pp.4-5):

Management Characteristics

Management operating and financial decisions are dominated by a single person.

Management's attitude toward financial reporting is unduly aggressive.

Operating and Industry Characteristics

Profitability of entity relative to industry is inadequate.

Sensitivity of operating results to economic factors is high.

Engagement Characteristics

Many contentious or difficult accounting issues are present.

Frequent difficult-to-audit transactions or balances are present.

Considering negative relevance (NR) and professional skepticism, as shown in Exhibit 6.3, the factor of corroboration (CORR) is present in the audit situation if, "...corroborating evidential matter has been obtained in response to negative relevance or elements of background information which should raise the auditor's level of professional skepticism."

Objectivity (OBJ)

In addition to corroboration (CORR), either of the factors of objectivity (OBJ) or qualifications (QUAL) must be present in the audit situation in order for negative conclusive evidence to be obtained. The factor of objectivity (OBJ) is present in the audit situation if the "...evaluation of the evidential matter does not require a subjective judgement." "Subjective judgements" include estimates of value, future estimates, or applications of sets of rules. An example of an estimate of value is an appraisal of land. Examples of future estimates include estimates based on the outcome of a court case; estimates based on the useful life of an asset; or estimates based on

future actions by third parties (such as warranty liability). An example of an application of rules is the application of a Financial Accounting Standards Board Statement.

In accordance with this discussion, the factor of objectivity (OBJ) is not present in the audit situation if the evaluation of the evidential matter requires any one of the following types of subjective estimates:⁸

- a. estimates of value (such as market value).
- b. future estimates, including:
 - estimates based on the outcome of a court case.
 - estimates based on the useful life of an asset.
 - estimates based on future actions by third parties (such as warranty liability).
- c. application of rules.

Qualifications (QUAL)

If the factor of objectivity (OBJ) is not present, then the factor of qualifications (QUAL) must be present. The factor of qualifications (QUAL) is present in the audit situation if the "...factor of objectivity

(OBJ) is not present and the evidential matter has been evaluated by an individual with the appropriate technical qualifications." The Codified Statements on Auditing Standards contain provisions related to technical qualifications. These provisions address audit procedures related to the qualifications of a "specialist" and of individuals providing accounting estimates. Regarding the qualifications (QUAL) of a specialist, the Standards state that the auditor should ensure that:

1. the evaluation of evidential matter which requires the opinion of a specialist (AICPA, 1987, 336.05) has been performed by someone who:
 - a. possesses the professional certification, license, or other recognition of the competence of the specialist, and;
 - b. possesses a high reputation of standing in the view of his peers and others familiar with his performance, and;
 - c. has communicated to the auditor the methods and assumptions behind the expert's opinion.

Regarding the qualifications (QUAL) of an individual performing an accounting estimate, the Standards state that the auditor should ensure that:

- a. the accounting estimate has been performed by competent management personnel, and;
- b. the auditor has evaluated the reasonableness of the accounting estimate and has ascertained that the accounting estimate is presented in

accordance with generally accepted accounting principles.

In accordance with these guidelines, as shown in Exhibit 6.3, the factor or qualifications (QUAL) is present in the audit situation if:

the auditor has determined that the individual evaluating the evidential matter is technically qualified and the auditor understands the assumptions and methods used by this individual.

6.322 Positive Conclusive Evidence

As shown in Exhibit 6.3, in order to obtain positive conclusive evidence, the factors of internal control (IC), inherent contingencies (INH), and either objectivity (OBJ) or qualifications (QUAL) must be present.⁹ The factor of internal control is present in the audit situation if the auditor has "...examined the entire population of items or the auditor has expanded his audit procedures to consider an increased level of control risk." Additionally, the factor of inherent contingencies (INH) is present in the audit situation if the auditor has "...examined the entire population of items or has expanded his audit procedures in order to consider an increased level of inherent risk."

The Codified Statement on Auditing Standards contain procedures which the auditor should follow if unduly high levels of audit risk are present in the audit situation. In general, the auditor should:

1. expand the sample of evidential matter.
2. perform the audit procedure at or near the financial statement date.
3. gather more than one type of evidential matter.

Therefore, as shown in Exhibit 6.3, the factor or internal control (IC) or inherent contingencies (INH) is present in the audit situation if:

the entire population of items is examined, the sample of evidential matter has been expanded, the evidential matter has been gathered near the financial statement date, or the corroborating evidential matter has been obtained in order to consider an increased level of control or inherent risk.

6.4 Decide on Financial Statement Assertion

Once a determination is made concerning the level of evidence, a decision must be made concerning the

disposition of the financial statement assertion. The appropriate decisions are shown under each type of evidence. If prima facie evidence is obtained, judgement is suspended on the financial statement assertion until new or corroborating evidential matter can be obtained. If negative conclusive evidence is obtained, the financial statement assertion is automatically rejected (is deemed false). However, if positive conclusive evidence is obtained, the assertion is automatically accepted (is deemed true).

6.5 Summary

This chapter concludes the normative portion of the study. Like the Toba-Kissinger model, the present model has been developed through a normative methodology on the basis of a review of philosophical and legal concepts of evidence. The present model, however, possesses certain original characteristics.

First, the model is based on factors which affect the competence of evidential matter, which enhances the model's applicability to actual audit situations. These factors have been defined on a more precise basis than in the early studies (Stettler, 1954; Mautz, 1958; Windal, 1961; Arens, 1970) and have been arranged into a model which may be viewed from both a procedural perspective and in terms of three levels of evidence.

From a procedural perspective, the model consists of three phases. In the first phase (Inputs), the financial statement assertion and the situational context of the audit are identified. In the second phase (Determine the Validity of Evidential Matter), the validity of single pieces of evidential matter is determined. In the final phase (Determine Evidential Support), valid pieces of evidential matter are added to total "bodies" of evidential matter in order to determine whether the evidential matter provides a sufficient amount of "evidence" which either contradicts or supports the financial statement assertion.

In addition to the three phases, the model also incorporates three levels of evidence, which are additive in nature. In order to reach the first level (Valid Evidential Matter), the piece of evidential matter must be a good surrogate for the "real" world item it purports to represent. In order to reach the second level (prima facie), the piece of evidential matter must be a good surrogate and be relevant toward falsifying or verifying the financial statement assertion. In order to reach the final level of evidence, all pieces of evidential matter must be good surrogates, be relevant, and (in totality) contradict (or support) the financial statement assertion in both quantitative and qualitative terms.

The next chapter describes the application of the model to audit failures. The perspective of the model in terms of levels of evidence is emphasized.

Endnotes

- 1 Within the context of this discussion, "operationalize" means to define the model's elements on a more precise basis.
- 2 While the identification of the financial statement assertion may seem a bit obvious, certain authors (Arens, 1970; Kissinger, 1974) have stated that a great deal of research needs to be performed in this area. Also, as will be shown in the next chapter, many audit failures are caused by failures to identify the financial statement assertion.
- 3 In the model, "Due Care" is used as an "all other" category for procedures which cannot be classified into the other categories of situational contingencies.
- 4 While the examination of audit programs do not necessarily provide total indications of whether the engagement has been properly planned, they will be used in this study as indicators of the quality of the audit planning.
- 5 A "public source" will be defined as any evidential matter obtained from an entity which regularly provides information concerning the client to the general public. Public sources include newspapers, governmental agencies, or regulatory agencies.
- 6 Within the context of the present model, the technical qualifications of a "specialist" auditor would be considered with respect to the factor of qualifications (QUAL).
- 7 According to the logic of the model as shown in Exhibit 5.5.
- 8 These categories of "subjective judgements" are related to the "qualitative" and "quantitative" types of hypotheses discussed in Chapter 4.
- 9 The factors of qualifications (QUAL) and objectivity (OBJ) are defined in the same manner as for negative conclusive evidence; therefore, they are not discussed in this section.

CHAPTER 7

A TEST OF THE MODEL

7.0 Introduction

The model was tested by applying it to a series of actual audit failures. The purpose of applying the model to the audit failures was twofold. First, the model was tested to determine whether it could have prevented the audit errors. Secondly, the internal consistency of the model was examined by ascertaining whether the model treated certain situations in a consistent manner.

7.1 Previous Analyses of Audit Failures

In recent years, three major studies analyzed audit failures. In the first study, St. Pierre and Anderson (1979, 1984) provided a purely descriptive analysis of errors which resulted in litigation against auditors. This study, which examined 119 court cases, classified audit errors as follows:

- 1- GAAP Interpretation, disclosure
- 2- GAAP Interpretation, general
- 3- GAAS Interpretation
- 4- Execution

In the second study, Palmrose (1987) also used general categories to describe audit errors. This study included a larger sample of cases than St. Pierre and Anderson and placed more emphasis on the role played by client fraud in audit failure. The categories used by Palmrose to describe audit errors included:

¹
1) Irregularities

- Management Fraud- other than illegal political contributions and foreign payments
- Management Fraud- illegal payments.
- Employee Defalcations

2) Errors

- In conjunction with business failure
- Other

In the last of the studies, Coglitore and Berryman (1988) examined a small sample of audit failures in order to ascertain the appropriateness of analytical review procedures used by the auditors. The study provided a detailed analysis of each case and outlined the types of analytical review procedures which may have detected the errors or irregularities. This study differed from the first two studies in that only a small number of cases were examined on a detailed basis.

7.2 Examination of Audit Failures in the Current Study.

In this study, each case was "superimposed" over the model in order to identify the errors which would or would not have been prevented by the model. Appendix one contains a detailed description of the methodology used to analyze each case. This chapter provides a cross sectional (across case) description of both types of errors. From a procedural standpoint, certain situations in the cases exposed inconsistencies in the model's logic. These situations are also described in the chapter.

The sample of cases was selected from Accounting Series Releases (ASR's) and Accounting and Auditing Enforcement Releases (AAER's) which have been published by the Securities and Exchange Commission from the period 1975-1987.² A total of fifty eight cases contained audit failures. One of these cases (AAER 109A) was used to test the methodology. The remainder of the cases were used in the study. The final list of cases used is presented in Appendix one, which also summarizes the errors for each of the cases. In order to minimize biases of the researcher, only those errors specifically described by the report were used as data. The remainder of the chapter describes the application of the model to the audit failures.

7.3 The Model's Inputs

There are four inputs to the model. The operationalized versions of these inputs, have been summarized in Exhibit 6.1 (see page 167). These inputs consist of the financial statement assertion (0.1), background information (0.2), the observation gathered through the appropriate audit technique (0.3), and the auditor's working papers (0.4). The following discussion describes the errors related to these inputs. A summary of these errors is provided in Appendix two.

Financial Statement Assertion (0.1)

A financial statement assertion has been defined as "...a representation by management which the auditor verifies by evaluating evidential matter." The important procedure concerning the financial statement assertion is that the auditor should identify all the financial statement assertions associated with an account.

As shown in Appendix two, eleven errors were related to failures to identify financial statement assertions. For many of these errors, the auditors failed to apply basic audit procedures. For example, in AAER 69, the auditor confirmed the accounts receivable, but failed to ascertain whether the accounts were

realizable. In ASR 288, the auditor failed to ascertain whether the client would obtain a future benefit from certain advertising costs. In ASR 196 (Equity Funding), the auditor failed to ascertain whether accounts receivable were due from bona fide customers. In AAER 115, the auditor confirmed the existence and amount of a mortgage but failed to ascertain whether the mortgage was assumable. Like these examples, all other errors associated with this input involved failures to perform basic auditing procedures.

Background Information (0.2)

The auditor's background information consists of the auditor's professional training (I) and the auditor's knowledge of the situational contingencies (II) of the engagement.

I. Professional Training

The input of professional training emphasizes that the auditor should possess adequate professional training to audit the financial statement assertion being considered and inexperienced auditors should properly be supervised. Thirteen errors were related to professional training. Five of these errors were attributable to inexperience on the part of the

auditor. In two of these instances (AAER 29, 106), the auditor had never performed an audit. In the three other instances (ASR 173 (Talley), 241 (Fisco); AAER 118), the auditor lacked the experience to perform audits in a specialized industry.

In addition to the errors caused by inexperience, eight errors were related to poor staff supervision. In one instances (AAER 27), the unsupervised individual was an audit manager. In the other seven cases (ASR 196 (Cenco), 285, 288; AAER 18, 30, 62, 118), the individuals were at the junior level.

II. Situational Contingencies:

In addition to professional training, background information also includes procedures related to the situational contingencies of the audit engagement. Situational contingencies is comprised of a) internal control, and b) other situational contingencies.

a) Internal Control

The first major component of situational contingencies states that the auditor should perform an adequate investigation of the client's control system. As shown in Appendix two, seven errors regarding internal control were found.³ Three of these errors (ASR 196 (Cenco), 210, AAER 76) were related to

internal controls for inventory. Three other errors (ASR 196 (Equity), 212, 285) were related to internal controls for accounts receivable. Final errors were related to the auditor's failure to obtain an adequate understanding of the client's payables (ASR 288) and cash (AAER 2) control systems.

b) Other Situational Contingencies

The second element of situational contingencies has been labelled "other situational contingencies". This portion of background information includes procedures embodied in certain Statements on Auditing Standards, which include:

- 1) Predecessor Auditor: communicating with a predecessor auditor;
- 2) Analytical Review: performing analytical review on a preliminary basis and throughout the engagement;
- 3) Going Concern: performing the necessary audit procedures in order to identify conditions which indicate that the client may not have the ability to continue operating as a "going concern";
- 4) Related Party Transactions: investigating circumstances which may

indicate the existence of related party transactions;

- 5) Due Professional Care: performing any other procedures which are required to ensure that the audit has been performed with due professional care.

1) Predecessor Auditor

Five errors were associated with failures to communicate with predecessor auditors. In four cases (ASR 283; AAER 27, 32, 106), the auditor communicated with the predecessor auditor but failed to ascertain the reasons for the change in auditors. In a final case (ASR 173 (Republic)), the auditor failed to determine the nature of two predecessor auditors' disagreements with management.

2) Analytical Review

Only one error was cited for a failure to perform analytical review (ASR 292 (Mattel)). According to the SEC report, the auditor should have performed an analytical review of sales.

3) Going Concern

Two errors were related to going concern issues. In the first instance (AAER 86), the auditor failed to

investigate three years of consecutive net losses by a subsidiary of the client. In the second instance (AAER 106), the client's stock had been suspended from trading.

4) Related Party Transactions

Thirteen instances of failures to investigate related party transactions were found. In four of these instances (ASR 283; AAER 39, 46, 161), the auditor failed to investigate transactions which had occurred between the client and companies controlled by officers/managers of the clients or the client itself. In two other instances, the auditor ignored that the client had purchased assets (AAER 115) or issued stock (AAER 159) at below market prices. In ASR 173 (National Student Marketing), the auditor failed to investigate an unusual transaction wherein an employee had purchased an insolvent subsidiary of the client. Finally, in six other cases (ASR 173 (Republic), 196 (OMNI), 227 (Western Properties), (Co-Build); AAER 27, 71), the auditor failed to investigate or disclose many obvious related party transactions.

5) Due Professional Care

Thirty eight errors were related to due professional care. Eighteen of these errors were

related to misapplications of accounting principles. Twelve of these misapplications were caused by the auditor's failure to properly interpret the accounting principle.⁴ For example, in AAER 12, the auditor failed to consult AICPA Statement of Position 78-6 which states that workmen's compensation liability on the books of an insurance company should be adjusted for inflation. In AAER 69, the auditor disregarded the proper accounting treatment for consignment sales and certain government contracts. In AAER 118, the auditor's misunderstanding of the AICPA industry audit guide, Audits of Brokers and Dealer's in Securities, permitted the client to trade securities with various controlled entities and record revenue on these sales. In addition to misinterpretations of principles, six misapplications (ASR 173 (Penn Central, four times), 227 (Co-Build); AAER 45) of GAAP were related to the auditor's inability to interpret the substance of the transaction.

In addition to errors related to the mis-application of accounting principles, seven errors were related to the auditor's failure to communicate with individuals within his own firm. In four of these instances (ASR 196 (SaCom), (Equity); AAER 12, 115) the auditor failed to consult with the previous year's engagement auditor. In three other instances (AAER 118), there was a breakdown of communication between departments of the audit firm.

Eleven errors were related to the auditor's failure perform basic auditing procedures.⁵ Examples included failures to follow procedures in the audit program (AAER 27, 118); a failure to obtain an understanding of the client's organization (AAER 81); and a failure to obtain an adequate understanding of the client's inventory counting procedures (AAER 2).

In addition to the errors detected by the model, in two instances, the definition of due professional care would not have prevented errors related to subsequent events. In the first instance (ASR 285), the SEC report stated that the auditor should have reviewed a contract (as a "subsequent event") in order to determine whether a receivable should have been reduced. In the second instance (AAER 67), the auditor failed to examine large, unusual cash payments by the client after the balance sheet date.

Audit Technique (0.4)

An audit technique has been defined as any method used by the auditor for gathering evidential matter. The important aspect of this input is that the choice of audit technique must reflect the auditor's background information and the nature of the financial statement assertion being investigated.

Four instances were cited regarding weaknesses in the audit program. In two of these situations (ASR 196

(Cenco); AAER 18), the auditor used a "canned" audit program. In the two other situations (AAER 12, 127), the audit program was not canned; however, it failed to reflect background information known to the auditor.

Working Papers (0.4)

The final input to the model consists of the auditor's working papers. The working papers should document that the auditor has: 1) identified the financial statement assertion; 2) followed all of the procedures for obtaining background information; and 3) chosen an audit technique which reflects the background information and the nature of the financial statement assertion.

Four instances of weaknesses in working papers were found. In the first situation (AAER 76), the auditor's working papers consisted of a signed audit program. In three other cases (ASR 173 (Republic); AAER 30, 67), the SEC report repeatedly cited working paper weaknesses.

7.31 Summary of the Inputs

As shown in the foregoing discussion, a large number of errors were related to failures to perform the procedures prescribed for these inputs. The frequency of such errors supports the emphasis which

the model's philosophical foundation places on "background information." In general, the model adequately described the errors presented by the audit failures. This ability may have resulted from the heavy reliance placed on Statement on Auditing Standards (in chapter six) to define the model's inputs and the emphasis which these standards place on items constituting "background information."

Two troublesome aspects regarding these inputs were discovered. First, the large number of errors placed into the "due professional care" category implies that this category should be expanded. Additional sub-categories regarding the "misapplication of accounting principles" and "inadequate communication within the audit firm" should be added to the model. Secondly, considering the two errors which the model would not have prevented, the category of "due professional care" may need an additional category for "subsequent events."

7.4 Level One: Valid Evidential Matter.

The first phase of the model entails assessing the validity of evidential matter. The operationalized version of the first phase of the model has been summarized in Exhibit 6.2 (see page 177). The first step is to ascertain whether the evidential matter is real or demonstrative.

7.41 Real and Demonstrative Evidential Matter

The type of evidential matter is determined by whether the factor of directness (DIR) is present in the audit situation. The evidential matter is considered "real" if directness (DIR) is present and "demonstrative" if directness (DIR) is not present. Directness (DIR) is considered present if the evidential matter is gathered directly by the auditor and is not a surrogate for the item involved in the financial statement assertion. In the previous chapter, two types of surrogates were outlined. These surrogates included:

1) Management Representations

a) Explicit Management Representations, such as statements by officers or employees of the client.

b) Implicit Management Representations, such as calculations based on client supplied data.

2) 3rd Party Statements, such as confirmations or appraisals.

The specific instances of real or demonstrative evidential matter are described in Appendix one.

7.411 Real Evidential Matter

In the examination of the audit cases, a total of twenty nine situations were encountered wherein the evidential matter did not fall into one of the categories of surrogates provided above, thereby qualifying as real evidential matter. In all of these instances, the auditor attempted to verify the financial statement assertion on the basis of his own knowledge or action. In reviewing the cases, these instances of real evidential matter could generally be classified into one of three categories, which are discussed below.

1) Examination of Internal Records

This category of evidential matter, which is labelled "Internal Documentation" in Appendix one, consisted of an examination by the auditor of the client's internal records on the basis of knowledge possessed (by the auditor) prior to commencing the engagement, such as the basic principles of mathematics or accounting. Eight instances of this type of evidential matter were found. Six of these instances

(ASR 196 (Cenco); ASR 241 (Fisco), ASR 288, ASR 292 (Geon), (Mattel); AAER 2) involved simple recalculations or tracing by the auditor. Two more instances (ASR 288, 292 (Geon)) involved analytical review procedures performed by the auditor.

2) Examination of External Records

This category of evidential matter, which is labelled "External Documentation" in Appendix one, consisted of an examination of client's records by the auditor from data obtained from outside the client's organization. Seventeen instances of this type of evidential matter were found. In gathering this type of evidential matter, the auditor compared the financial statement record with knowledge obtained during the engagement. Examples of this type of evidential matter included examination of cancelled checks in order to ascertain whether the client had paid for the purchase of a mutual fund (ASR 227 (Cosmopolitan)); an examination of a legal agreement between the client and a third party in order to determine whether the client had properly valued stock options (AAER 115); comparisons of inventory pricing information with sales invoices in order to determine the validity of inventory costs to the client (ASR 210); an examination of the financial statements of another organization in

order to ascertain whether the organization was capable of meeting its obligations to the client (AAER 29); and a comparison of securities traded by the client in order to ascertain whether a transaction qualified as a wash sale (AAER 32).

3) Comparison of Internal Records

This final category consisted of a simple comparison by the auditor of two pieces of information provided by the client. Only four instances of this type of evidential matter were found. In Appendix one, these instances of evidential matter are labelled "Internal Comparison". In the first instance (ASR 210), the auditor compared two separate inventory listings which were prepared by the client's system. In the second instance (AAER 13), the auditor compared the client's accounts receivable with the cash receipts journal in order to perform an "alternate verification procedure" for accounts receivable. In ASR 292 (Mattel), the auditor compared separate sales forecasts prepared by the client in order to ascertain the reasonableness of deferring certain tooling costs. In the same case, the auditor compared inventory data provided by the client with sales forecasts in order to determine the reasonableness of the client's inventory levels.

7.412 Demonstrative Evidential Matter

A great number of instances of demonstrative evidential matter were found which consisted of one of the types of surrogates provided above. As previously stated, these categories consisted of 1) management representations, and 2) third party statements.

1) Management Representations

The first category of surrogate, management representations, has been separated into the categories of explicit and implicit management representation. Explicit management representations consist of statements by employees of the client. Twenty five instances of explicit management representations were found. Twenty three of these instances consisted of direct statements by client employees. In an additional situation (ASR 241 (Falstaff)), the auditor accepted a management representation letter as his sole source of evidential matter. In a final instance (AAER 27), the auditor failed to send a second confirmation and accepted management representations.

Thirty instances of implicit management representations were found. Eleven of these instances, which are labelled "Client Supplied Data" in Appendix one, consisted of calculations performed by the auditor

with data supplied by the client. These instances of evidential matter included a verification of the reasonableness of percentage of completion calculations with client supplied cost data (ASR 173 (National Student Marketing, 227 (Co-Build)); a verification of the adequacy of insurance liability reserves (ASR 241 (Fisco); AAER 12) with client supplied schedules; a verification of the reasonableness of amounts charged to government contracts with client supplied cost data (ASR 173 (Talley), 196 (SaCom)); a verification of the reasonableness of utility rates with client supplied cost data (ASR 238); and appraisals supplied by the client's management (ASR 227 (Co-Build); AAER 27, 114, 161).

In addition to client supplied data, four instances (ASR 196 Cenco; AAER 30, 76, 127) of implicit management representations involved inventory information, such as inventory tags, which had been handled by the client. These instances of implicit management representations are labelled "Inventory" in Appendix one.

In addition to client supplied data and inventory information, seven other instances of implicit management representations, which are described as "Assumption" in Appendix one, involved assumptions by the auditor. In these cases, the auditor accepted financial statement assertions on the basis of his

general knowledge of the client. In one case (ASR 288), the auditor assumed that that all of the client's computer costs were for current operations unless the client indicated otherwise. In the same case, the auditor assumed, based on past experience with the client, that the client's "pre-opening" costs for certain restaurants would benefit future periods and that certain advertising costs incurred by the client would also result in an identifiable future benefit. In another assumption (ASR 241 (Falstaff)), the auditor assumed that creditors' prohibition on the client's issuance of preferred stock was "normal". In AAER 12, the auditor assumed, based on the advice of an actuary, that the reserves for old liabilities of an insurance company were adequate. In AAER 2, the auditor used an arbitrary gross profit percentage to estimate the value of the client's inventory. In a final assumption (AAER 127), the auditor assumed that inventory would produce revenue merely because it existed.

In addition to the three types of evidential matter discussed above, eight instances of implicit management representations consisted of documentation provided by management. These instances of evidential matter included information on letterheads of banks provided by the client to the auditor (ASR 173, (Stirling Homex); AAER 81); copies of financial statements provided by clients (196 (Omni); AAER 53); a

copy of a letter from the client's lawyer provided by the client (ASR 238); a copy of a study conducted by the client (AAER 78); a copy of an agreement between the client and a subsidiary (AAER 81); and a copy of a another company's financial statements provided to the auditor by the client (AAER 29). In Appendix one, these instances of evidential matter are labelled "Management Supplied Documentation."

2) Third Party Statements

The second category of surrogate involves third party statements. Twenty one instances of this type of evidential matter were found. Eleven of these instances consisted of confirmations obtained from third parties. In Appendix one these are labelled "Confirmation". Five other instances (ASR 173 (Republic), 292 (Mattel); AAER 12, 85, 129) consisted of appraisals obtained from third parties. Two instances (AAER 32, 45) consisted of opinions obtained by the auditor from "technical specialists" concerning how certain generally accepted accounting principles should be applied. One instance (ASR 241, Fisco) consisted of a legal opinion obtained by the auditor. In AAER 129, the auditor obtained a statement from the general partners of a partnership in which the client was involved. In a final instance, (AAER 16 (Litton)), the auditor obtained a direct

statement from the Department of the Navy concerning a fixed fee contract.

7.413 Summary of Real and Demonstrative Evidential Matter

In the previous chapter, real evidential matter was described as evidential matter which the auditor gathers through his own action and which is not a surrogate for the item involved in the financial statement assertion. The audit cases demonstrated that the definition of directness (DIR) in the original model was insufficiently precise concerning those instances of evidential matter which were not surrogates and constituted real evidential matter. However, three categories of real evidential matter were developed:

Internal Documentation- evidential matter consisting of a direct examination of the financial statements by the auditor on the basis of knowledge which he possessed prior to the engagement. Examples included recomputation of client calculations and analytical review.

External Documentation- evidential matter consisting of a verification of the

financial statement assertion by a direct examination of documentation or other information which is external to the client's organization. Examples included examination of legal agreements or public documents.

Internal Comparison- evidential matter consisting of a direct comparison by the auditor of two pieces of information or data obtained from the client's records. Examples included a comparison of a cash receipts journal with the individual customer accounts.

In addition to real evidential matter, two categories of surrogates were developed in the previous chapter. These categories of surrogates generally described the types of demonstrative evidential matter obtained in the cases. On a slightly more precise basis, these surrogates may be expressed as:

1) Management Representations

- a) Explicit Management Representations, such as statements by officers or employees of the client or management representation letters.

- b) Implicit Management Representations, such as calculations based on client supplied data; assumptions by the auditor; or external documentation which has been supplied by client.

- 2) 3rd Party Statements, such as confirmations or appraisals.

7.42 Criterion 1: Authentication

Once a determination is made concerning whether the evidential matter is real or demonstrative, the evidential matter must be authenticated. Authentication has been summarized in Exhibit 6.2 (see page 177) Real and demonstrative evidential matter must satisfy a different set of requirements in order to be authenticated.

7.421 Authentication of Real Evidential Matter

Real evidential matter is authenticated if the factors of identification (ID) and either firmness (FIRM) or timeliness (TIM) are present in the audit situation.

Identification (ID)

The factor of identification (ID) is considered present in the audit if:

- 1) The auditor has obtained the evidential matter from a public source, or;
- 2) The auditor has specifically identified the evidential matter with a characteristic unique to the item involved in the financial statement assertion.

Only seven errors were caused by the absence of this factor. Each of these errors, however, emphasized the importance of this factor in authenticating evidential matter. In the first error (AAER 13), the auditor attempted to perform alternative verification procedures on accounts receivable after many confirmation forms had not been returned. In performing these procedures, the auditor compared amounts that had been received by the client, according to the cash receipts journal, with deposits recorded on the bank statement; however, since the deposits on the bank statement were the client's own funds, the "alternate verification procedure" failed to detect that many of the customer accounts were fictitious. In two other

cases (ASR 212; AAER 81) the client claimed that certain cash receipts were revenue; however, the auditor failed to match cash receipts (on the cash receipts journal) with specific invoices or other documentation which would have shown that the receipts were actually not revenue. In AAER 92, the client represented that certain research and development expenditures had "alternative future uses". In order to verify the assertion, the auditor examined cancelled checks pertaining to the costs but failed to determine the purposes of the payments. In a similar error (ASR 288), the auditor performed an analytical review to determine the reasonableness of certain construction costs but failed to examine specific documentation in order to determine if the costs were properly capitalizable. In final errors (AAER 76, 118), the auditor failed to reconcile accounts receivable confirmations with the subsidiary ledger. These errors occurred for pieces of evidential matter which the current model would define as "demonstrative"; an inconsistency, therefore, may be present in the model. The nature of this inconsistency is discussed later.

As a final observation concerning identification (ID), errors related the absence of this factor differed according to the type of real evidential matter which had been evaluated. If the auditor examined internal documentation on the basis of his own

knowledge (such as the comparison of the cash receipts journal and the customer accounts described in AAER 13), the factor of identification (ID) seemed to enable the auditor to independently verify the existence of the item involved in the financial statement assertion (such as the correlation of a customer's existence with an independently verified address). If the auditor evaluated external documentation, identification (ID) enabled the auditor to ensure that the item involved in the financial statement assertion satisfied a set of criteria, such as the requirements for revenue recognition. This facet of identification (ID) was demonstrated by the two cases involving the auditor's failure to determine whether certain cash deposits were not revenue (ASR 212, AAER 81).

Firmness (FIRM)

The factor of firmness (FIRM) is present in the audit situation if:

- 1) The form of the evidential matter is difficult to alter, or;
- 2) The form of the evidential matter is not difficult to alter but the internal controls for safeguarding the evidential are in place.

Three errors were caused by an absence of this factor. In the first case (ASR 292, Mattel, Inc.), the client concealed a fraud by having its own employees, rather than the common carrier, initial bills of lading. In two other cases, (ASR 173, Stirling Homex); AAER 81), the client forged false financial information on the letterhead of other organizations. These errors would not have been prevented by the model since it only requires the presence of this factor for real evidential matter.

Timeliness (TIM)

The factor of timeliness (TIM) is present in the audit situation if the evidential matter has been gathered at or near the financial statement date. No specific errors were cited for this factor.

7.422 Authentication of Demonstrative Evidential Matter

In order to authenticate demonstrative evidential matter, the auditor should ensure that the factors of audit control (AC), integrity (INT) and independence (IND) are present in the audit situation.

Audit Controls (AC)

The factor of audit controls (AC) is present in the audit if:

- 1) The auditor has maintained physical control over the evidential matter, such as maintaining control over inventory tags, or;
- 2) The auditor has not permitted the client to influence the type of audit procedures or the scope of the audit procedures performed.

Audit controls (AC) was the factor most accurately described by the model. Nineteen errors were associated with this factor. These errors involved both a lack of physical control and client influence on the type and scope of evidential matter obtained. In two cases, the auditor permitted the client to conduct telephone confirmations (ASR 173, (National Student Marketing)) and permitted the client to handle confirmations (AAER 81). In another failure (ASR 196, Equity), the auditor extracted a sample of confirmations from a listing of customers provided by the client. In another instance, the auditor permitted the client to determine the sample of customer balances to

be confirmed (ASR 285). In four other instances (ASR 196 (Cenco), 210; AAER 30, 127), the auditor failed to maintain control over inventory tags or listings. In four other instances (ASR 212; AAER 16, 39(twice)), the auditor allowed the client to influence the accounting treatment for items requiring the interpretation of Generally Accepted Accounting Principles. In five other instances (ASR 212, 288; AAER 29, 81, 83), the client controlled access to the information which the auditor used as evidential matter. In AAER 69, the auditor allowed the client to arrange a telephone confirmation with the purchaser of a major asset of the client. In a final instance (AAER 81), the auditor permitted the client to dictate the audit procedures for verifying revenue.

Integrity (INT)

In addition to audit control (AC), the auditor must also ensure that the factors of integrity (INT) and independence (IND) are present in the audit situation. Integrity (INT) is present in the audit situation if:

- 1) The auditor has performed a thorough search for background information and has investigated the work of any specialist, and;

- 2) The auditor has not uncovered any indications that the evidential matter has originated or is controlled by an entity which does not possess professional integrity.

A substantial amount of difficulty was encountered in attempting to apply this factor to specific pieces of evidential matter. The implication may be that professional integrity for externally produced evidential matter may be more easily associated with specific pieces of evidential matter than for evidential matter produced by the client; professional integrity associated with the client, therefore, may be more closely associated with background information.

Independence (IND)

The factor of independence (IND) has been categorized according to whether the entity from which the evidential matter has originated (or which controls the evidential matter) is internal or external to the client. This was the factor most frequently associated with errors pertaining to demonstrative evidential matter.

Fifty eight errors were caused by the auditor's blind acceptance of either explicit or implicit management representations, as described above. Only

four errors related to independence were caused by the auditor's acceptance of evidential matter obtained from outside the client's organization. In the first case (AAER 129), the auditor obtained a substantial amount of evidential matter about a bank from various local business institutions. This bank, however, was the only financial institution in an economically depressed, medium size city. Since many local businesses relied on this bank as their sole source of financial support, they supplied the auditor with biased information. In addition, the factor of independence (IND) was absent in three instances in which the model would not prevented the errors. In two of these instances, (ASR 196 (Equity Funding); AAER 69), a party who was closely affiliated with the client returned the confirmation. Since the auditor was not aware of this relationship, he was not able to prevent the fraud. In another non-preventable error (ASR 238), the client concealed certain contract addenda from the auditor.

7.43 Criterion 2: Professional Agreement

In addition to authentication, the evidential matter must also satisfy the criterion of professional agreement. As previously mentioned, this criterion is satisfied if the factor of review (REV) is present in the audit situation. This factor is present in the audit if the evidential matter has been reviewed by a

professional with qualifications similar to those of the auditor.

Relatively few errors were caused by the absence of review (REV). Each of these errors, however, provided insight into important aspects of review (REV). In two cases (AAER 12, 45), the firm used a review process for contentious accounting issues. The "specialists", however, were not provided with information of the circumstances surrounding the issues; hence, they supplied the auditor with erroneous opinions. These cases emphasize that individuals reviewing an engagement must have an adequate knowledge of background information. In a second error (AAER 81), an audit manager disagreed with the procedures prescribed by the engagement partner; subsequently, he failed to "follow-up" on this disagreement because of his desire to obtain an upcoming promotion (to partner). This case demonstrates the importance of neutrality in performing a review. In two other cases (ASR 285; AAER 78), a "concurring" partner only made inquiries of the engagement partner without performing an independent examination. In ASR 288, another CPA firm actually reviewed the auditor's work and found numerous faults. In final errors ((ASR 173 (Republic, AAER 2, 62), the "concurring partner" failed to follow the firm's formal review procedures.

7.44 Summary of the Descriptiveness of Level One

The conclusions reached in the examination of the descriptiveness of this phase of the model are summarized below.

Regarding the authentication of real evidential matter:

- The factor of identification (ID), which was associated with seven errors, basically encompassed a comparison of the element embodied in the financial statement assertion with an independent characteristic unique to that element. If the real evidential matter involved an examination by the auditor of internal records, identification (ID) helped the auditor to obtain external verification that the item involved in the financial statement assertion existed. If the real evidential matter involved a comparison of the financial statement records with external documentation, identification (ID) helped the auditor ensure that the item involved in the financial statement assertion satisfied a set of criteria. In two instances, this factor

was relevant to demonstrative evidential matter, exposing a possible inconsistency in the model.

-Three errors were associated with firmness (FIRM). In two instances, the factor of firmness (FIRM) was absent for instances of demonstrative evidential matter.

- No errors were associated with timeliness (TIM).

Regarding the authentication of demonstrative evidential matter:

-The factor of audit control (AC), which was associated with nineteen errors, was generally descriptive and involved losses of physical control and losses of control over audit procedures.

-Independence (IND) was associated with fifty eight errors. In three instances, the model could not have detected the absence of this factor.

-Integrity (INT) was difficult to apply to specific pieces of evidential matter produced internally by the client. Therefore, professional integrity for the client may be more closely associated with background information than with specific pieces of evidential matter.

Regarding the factor of Review (REV):

- errors occurred because the reviewer 1) was not neutral; did not possess all of the background information, and; 3) did not conduct an independent investigation.

7.5 The Procedures for Level One

As stated at the beginning of the chapter, the procedures for the model were examined by ascertaining whether the model treated certain situations in a consistent manner. Two issues were found regarding the first level of evidence. These issues involved:

- 1) The Relationship Between Identification (ID) and Independence (IND).

2) Ultimate Authentication through Real
Evidential Matter.

Issue 1: The Relationship between Identification (ID)
and Independence (IND).

Two cases were analyzed for this issue. In J.B. Hanauer (AAER 13), the client did not permit the auditor to deliver confirmations to customers who desired to remain anonymous. For these customers, the auditor performed an alternative verification procedure wherein he compared an amount received on the customer's account receivable (according to the cash receipts journal) with the amount owed by the client. Unfortunately, since there was no segregation of the collection and recordkeeping functions regarding cash, the auditor's procedure failed to ascertain that many customer accounts were fictitious (there was no actual customer) and that the amounts being posted as the deposits were funds deposited by company employees.

In the ESM fraud (AAER 118), certain third parties were holding securities for the benefit of the client. In performing the audit of these securities, the auditor sent confirmations to these third parties; however, he failed to reconcile the confirmations (returned) with the records of the client. If the

auditor had performed this procedure, he would have discovered that many of the securities on the client's records were fictitious. The failure to reconcile confirmations with the financial statement records was also found in AAER 76.

Analysis

These two cases emphasize a potential inconsistency in the model's logic. In J.B. Hanauer, the auditor used real evidential matter: the factor of directness (DIR) was present in the audit (the evidential matter was gathered through a simple comparison by the auditor). Moreover, the auditor's failure to match the item involved in the financial statement assertion (the existence of a bona-fide) with independent proof of the customer's existence meant that the factor of identification (ID) was not present and the client was permitted to maintain fictitious customer accounts on the books.

In contrast, the evidential matter in the ESM fraud was demonstrative: the factor of directness (DIR) was not present (the evidential matter was gathered through a confirmation with a third party). As in Hanauer, the factor of identification (ID) was absent since the auditor failed to reconcile the item involved in the financial statement assertion (the existence of

specific entities) with the confirmations received from various entities holding securities for the client.

Since each of these cases involved a different type of evidential matter, their comparison implies that the factor of identification (ID) is important regardless of whether the evidential matter is real or demonstrative: the model, however, only emphasizes this comparison for real evidential matter. In the case of demonstrative evidential matter, however, the comparison of the financial statement records with the "real world" item may be indirectly accomplished through the factor of independence (IND). For example, if the auditor has chosen a sample of customer accounts from the financial statement records, confirmation replies from truly independent customers aid in ascertaining that the customers are embodied in the client's records. This result means that demonstrative evidential matter, in order to be authenticated, should be separated from the financial statement records and be obtained from truly independent entities.⁶

Furthermore, like the factor of identification (ID) for real evidential matter, the factor of independence (IND) assists the auditor in ascertaining that the evidential matter is an observation of the same item involved in the financial statement assertion.

Issue 2: Ultimate Authentication through Real
Evidential Matter

Some cases in which the auditor used demonstrative evidential matter showed a strength in the model. In evaluating the evidential matter, the auditor failed to ensure that the factor of independence (IND) was present in the audit situation. For example, in certain the cases (such as AAER 29, 106), the auditor accepted, at face value, management representations concerning financial statement assertions of the ownership of property. According the model's logic, since the factor of independence (IND) was not present (the evidential matter was gathered through a management representation), new evidential matter should have been obtained.

Regarding such new evidential matter, the SEC reports frequently suggested that the auditor should search for evidential matter which, according to the model, is "real". For example, in cases involving representations of ownership (demonstrative evidential matter), the SEC frequently suggested that these representations should have been corroborated by examining public records (which constitute "real evidential matter"). This replacement of demonstrative evidential matter with real evidential matter was also true when confirmations obtained from sources whose

existence had not been determined (AAER 13 81). In these cases, the SEC reports frequently suggested that the auditor should obtain real evidential matter, such as verifying the the customers' addresses by examining public information.

Analysis

These instances in which demonstrative evidential matter is replaced by real evidential matter imply a strong distinction between these two forms of evidential matter: when the factor of independence (IND) is not present in the audit situation, the auditor should obtain new evidential matter which is "real" in nature; the factor of independence (IND) is replaced by the factor of identification (ID).

7.51 Summary of the Procedures for Level One

Two conclusions concerning the first phase of the model were stated in this discussion:

- 1) A close relationship may exist between the factors of identification (ID) and independence (IND). For both types of evidential matter these factors seem to ensure that the

evidential matter is an observation of the same item represented in the financial statement assertion.

- 2) When the evidential matter is demonstrative (is a surrogate) and the factor of independence (IND) is not present, the auditor should obtain real evidential matter (which is not a surrogate).

7.6 Levels Two and Three: Prima Facie and Conclusive Evidence

The second and third levels of evidence consist of prima facie and conclusive evidence. The operationalized versions of these levels of evidence have been summarized in Exhibit 6.3 (see page 190).

7.61 Level Two: Prima Facie Evidence

Prima facie evidence means that any conclusions concerning the correctness of the financial statement assertion can be changed by the introduction of new evidential matter. Negative prima facie evidence contradicts the financial statement assertion. Positive prima facie evidence supports the financial statement

assertion. Negative prima facie evidence is obtained if the factors of initial relevance (IR) and negative relevance (NR) are present in the audit situation. Positive prima facie evidence is obtained if only the factor of initial relevance (IR) is present.

Initial Relevance (IR)

Initial relevance (IR) is present if common sense determines that the evidential matter has the potential to change the audit risk associated with the financial statement assertion. Errors concerning this factor could generally be classified into two categories. The first category involved evidential matter constituting an "assumption" on the part of the auditor. The second category involved a lack of "common sense" on the part of the auditor. Regarding "assumptions", all seven instances of this type of evidential matter, as previously described, were irrelevant. This irrelevance was caused by the auditor's reliance on background information which was not pertinent to the specific engagement. For instance, returning to AAER 12, the auditor assumed that all of the client's insurance reserves pertaining to claims over ten years old were sufficient. This assumption was based on the opinion of an actuary that such a "ten year rule" was generally correct. However, in this specific instance, the assumption was unreliable.

In addition to assumptions, eleven errors resulted from a lack of common sense. In four cases, the auditor performed clerical tests which were irrelevant to determining whether costs should have been capitalized (ASR 288; AAER 81); whether the rate of renewal for an insurance company's policies was adequate (ASR 241 (Fisco)); and whether costs entered into a break-even calculation were appropriate (ASR 292 (Mattel)). In AAER 29, the auditor used pro-forma financial statements, based on future estimates, to verify a purchaser's current ability to pay the price of a major purchase. In the same case, the auditor examined an agreement in order to verify whether the client had obtained legal title to a major asset which the client had sold; the agreement, however, only stated that the client would acquire legal title if certain conditions were met. In AAER 92, the auditor examined cancelled checks in order to ascertain whether certain research and development costs were for "alternative future uses", but failed to determine the purposes of the payments. In AAER 83, the auditor attempted to ascertain whether the client had been forgiven of a debt by comparing cancelled checks (supplied by the client) with postings to the client's cash receipts journal. In AAER 32, the auditor compared the formal maturity dates of two securities in order to determine if they had similar lives; the relevant evidential matter, however, was related to the supply

and demand for the securities. In two other instances (ASR 292 (Geon)), the auditor tested inventory obsolescence by examining samples of the fastest selling inventory and performed a simple tracing in order to determine whether the gross profit percentage used by the client in a consolidation was accurate.

Negative Relevance (NR)

The evidential matter is considered negatively relevant (NR) if there are many instances of that type of evidential matter which contradict the financial statement assertion. Twenty five errors were associated with contradictory evidential matter. In ASR 173 (Stirling Homex), the auditor ignored many written indications from government agencies showing that funding for certain projects (on which the client had recognized revenue) had not been approved. In a similar manner, in ASR 196 (OMNI), the auditor ignored many indications that a subsidiary of the client would not be able to pay items of revenue that had been accrued by the client. In three other cases (ASR 227 (Co-Build); AAER 69, 78), the auditor ignored the fact that amounts owed to the client on credit sales were past due. In four cases (ASR 173 (Stirling Homex), 292 (Mattel); AAER 2, 76), the auditor ignored many confirmations which differed from the amounts shown on

the client's books or which indicated that amounts owed to the client would not be realized. In ASR 227 (Cosmopolitan), the client claimed that it did not control another entity. The auditor subsequently ignored a cancelled check, with the endorsement by an officer of the client, for the purchase of the other entity. In ASR 292 (Mattel) the auditor ignored that many of the client's sales forecasts were exactly equal to the client's current level of inventory. In this same case, the auditor ignored conflicting appraisals for a facility of the client which had been lost in a fire. In a similar case (AAER 129), the auditor ignored an appraisal of real property which differed substantially from the client's sales price. In AAER 27, the auditor inspected the financial statements of an entity which had purchased a major asset from the client; however, he ignored many indications on the statements that the entity was insolvent. In the same case, the auditor ignored many indications in written forms of evidential matter that a series of related party transactions were a sham. In other cases, the auditor ignored many discrepancies in the cost (to the client) of individual inventory items (ASR 210); many obsolete items of inventory (ASR 212); or many differences in the number of items of inventory on hand and inventory listings provided by the client (ASR 196 (Cenco)). In AAER 115, the auditor ignored a confirmation by a bank which stated that a mortgage

which the client had purportedly assumed was not assumable. In ASR 241 (Fisco), the client's lawyer informed the auditor that the client had entered into an oral agreement to purchase another entity; the auditor then permitted the client to prepare consolidated financial statements, contrary to Accounting Principles Board Opinion 16. In AAER 53, the auditor ignored substantial documentation which stated that a sale by the client had not been consummated. In three other errors, the auditor ignored many differences between the records of a broker dealer and a clearing firm (AAER 18); many direct statements by the Department of the Navy that the client would incur a loss on a fixed fee contract (AAER 16 (Litton)); and a bank transfer schedule which demonstrated that the client had used the advances from another entity for its own purposes (ASR 227 (Western Properties)).

In a final case (AAER 32), the client claimed that two securities were similar even though their yields were substantially different. This error may not have been prevented by the model since the model does not address the degree to which the yields would have to differed.

7.62 Level Three: Conclusive Evidence

If the level of conclusive evidence is reached, the conclusion reached concerning the financial statement assertion is so strong that it cannot be changed by the introduction of new evidential matter. Negative conclusive evidence is reached if the factors of corroboration (CORR) and either objectivity (OBJ) or qualifications (QUAL) are present in the audit situation. Positive conclusive evidence is obtained if the factors of internal control (IC), inherent contingencies (INH) and either objectivity (OBJ) or qualifications (QUAL) are present in the audit situation. Each of these types of evidence is discussed below.

7.621 Negative Conclusive Evidence

The first factor which must be present for negative conclusive evidence is corroboration (CORR). This factor is present when the auditor has obtained additional evidential matter in response to the presence of negative relevance (NR) or events which should raise his level of professional skepticism. For all of the errors of negative relevance (NR) cited in the previous section, the auditor failed to expand his procedures. The factor of corroboration (CORR), therefore, was not present.

Errors were also found regarding professional skepticism. These errors are caused by circumstances in the audit engagement which pertain either to a) internal control or b) other situational contingencies which should cause the auditor to raise his level of professional skepticism. The circumstances related to internal control include:

Deficiencies in the Control

Structure Design;

Failures in the Operation of the Control

Structure;

Other Failures.

Factors related to other situational contingencies embody certain characteristics of the client's management, operations or industry, or the engagement itself.

The errors related to each of these types of background information are shown in Appendix three. These failures effectively constituted instances wherein the auditor possessed the requisite background information but neglected to expand his audit procedures. Six errors occurred because the auditor possessed knowledge concerning the client's control system but failed to expand his audit procedures. Also, twenty errors occurred because the auditor possessed the requisite knowledge of "other situational

contingencies" but failed to expand his auditing procedures. For all of these errors, according to the model, the auditor should have searched for corroborating evidential matter.

In addition to corroboration (CORR), either of the factors of objectivity (OBJ) or qualifications (QUAL) must also be present in order to obtain negative conclusive evidence. In examining the audit cases, these factors were totally irrelevant toward ascertaining whether negative conclusive evidence had been obtained. The factor of qualifications (QUAL) was especially awkward in this context. This difficulty may imply that a retroductive type of reasoning may play a more important role in falsifying a financial statement assertion than inductive reasoning (repetitions of evidential matter): moreover, the events which tend to disconfirm financial statement assertions may be so obvious that mere common sense can be used to falsify the assertion: no specialized qualifications (QUAL) may be required.

7.622 Positive Conclusive Evidence

The factors of internal control (IC), inherent contingencies (INH) and either objectivity (OBJ) or qualifications (QUAL) must be present for positive conclusive evidence. Internal control (IC) and inherent contingencies (INH) are present if:

the entire population of items has been examined, the sample of evidential matter has been expanded, the evidential matter has been gathered near the financial statement date, or the corroborating evidential matter has been obtained in order to consider an increased level of control or inherent risk.

The audit errors committed regarding these factors are, in a sense, the same errors committed for professional skepticism (as listed in Appendix three). In both instances, the auditors neglected to expand their audit procedures for increased levels of risk. The model, therefore, would seem to possess a redundancy, which is discussed in a later section.

In addition to internal control (IC) and inherent contingencies (INH), either of the factors of objectivity (OBJ) or qualifications (QUAL) must be present in the audit situation. The factor of objectivity (OBJ) is present in the audit situation if the evaluation of the evidential matter does not involve:

- a) an estimate of value;
- b) future estimate;
- c) application of rules.

If the factor of objectivity (OBJ) is not present, the factor of qualifications (QUAL) must be present. Of those situations wherein the factor of objectivity (OBJ) was not present, sixteen errors were associated with technical qualifications (QUAL). In all of these instances, the auditor also failed to understand the assumptions underlying the judgement. Five of these instances involved future estimates. These estimates included whether a contractor would be awarded a contract on the basis of a bid to a government entity (ASR 173 (Talley); whether revenue recognized on a percentage of completion basis was accurate (ASR 173 (National Student Marketing); whether insurance reserves were sufficient (ASR 241 (Fisco); AAER 12); and whether cost estimates accrued by a defense contractor could be recovered by the client (ASR 196, SaCom). Seven instances involved estimates of value. These estimates included estimates of the value of mines (AAER 85, 161); an estimate of the value of a joint venture (AAER 114); an estimate of the adequacy of a utility's reserves for maintenance costs (ASR 238); an estimate of whether rents paid to the client were reasonable (AAER 129); and estimates of the value of real estate (ASR 173 (Republic), 227 (Co-Build)). Two errors (ASR 173 Penn Central (two times)) involved an application of rules.

In two instances, the model would not have prevented the errors even though the factor of

qualifications (QUAL) was not present. Both of these errors were related to opinions concerning the application of Generally Accepted Accounting Principles. In the first case, a technical specialist erred in determining whether the exchange of certain securities constituted a wash sale (AAER 32). In the second case, a technical specialist erred in determining whether the client controlled a business without legally owning stock (AAER 45).

7.63 Summary of the Descriptiveness of Levels Two and Three

The descriptiveness of levels two and three of evidence may now be summarized. Regarding level two:

Initial relevance (IR) was generally well described by the model; however, evidential matter is irrelevant not only when the auditor fails to use "common sense", but also when the auditor uses an "assumption" as his evidential matter. Negative relevance (NR) was generally adequately described by the model. The model could not have prevented one error which involved a "degree" of difference in the yields of two securities.

Regarding level three of evidence (conclusive evidence), the factors of corroboration (CORR) and either objectivity (OBJ) or qualifications (QUAL) are needed for negative conclusive evidence. Also, internal control (IC), inherent contingencies (INH), and either objectivity (OBJ) or qualifications are needed for positive conclusive evidence.

Regarding the factors for negative conclusive evidence:

Corroboration (CORR) was in general adequately descriptive. However, the factors of objectivity (OBJ) or qualifications (QUAL) were totally irrelevant toward obtaining negative conclusive evidence.

Regarding the factors for positive conclusive evidence:

the factors of internal control (IC) and inherent contingencies (INH) were considered twice in the model. The factors of objectivity (OBJ) and qualifications (QUAL) were in general descriptive. In two instances, the model could not have prevented errors even though qualifications (QUAL) was present.

7.64 Testing the Procedures for Levels Two and Three

One of the limitations mentioned in Chapter 1 stated that the model is only tested from a negative perspective. This limitation is especially apparent with regard to the latter stages of the model in which the auditor must make an ultimate decision concerning the financial statement assertion. The procedures for these levels of evidence, however, may be indirectly examined by considering the factors of corroboration (CORR), internal control (IC), and inherent contingencies (INH).

As previously mentioned, there is seemingly a redundancy in the model: known weaknesses pertaining to the latter two components of background information, (internal control and other situational contingencies) are considered twice. They are first considered in corroboration (CORR) and a second time in internal control (IC) and inherent contingencies (INH).

While these elements are considered twice, their treatment differs. They are first examined for components which should require the auditor to raise his level of professional skepticism. If no such components exist, corroboration (CORR) cannot be obtained and internal control (IC) and inherent contingencies (INH) are then considered.

The "double treatment" of these items is indirectly supported by the errors committed with

respect to them (as described in Appendix three). Within the context of the model, the auditors in these cases disregarded negative conclusive evidence (by not raising their professional skepticism and not attempting to obtain corroboration (CORR)). According to the model's logic, therefore, judgement on the financial statement should have been be suspended. The auditors, however, chose to accept the financial statement assertion (as if positive conclusive evidence had been obtained).

This result means that the items in appendix three should be treated twice. First, they should be examined for items which might raise the auditor's level of professional skepticism. If no such items exit, only then should these items be considered for the factors of internal control (IC) and (INH). As implied by the application of qualifications (QUAL) to negative conclusive evidence, a retroductive type reasoning (through corroboration (CORR)) may be important toward obtaining negative evidence and an inductive type of reasoning may be more important for obtaining positive evidence (through internal control (IC) and inherent contingencies (INH)).

7.641 Summary of the Procedures for Levels Two and Three

The following conclusion was reached concerning the procedures for levels two and three:

Retroductive Reasoning may play a more important role in falsifying a financial statement assertion than inductive reasoning.

7.7 Conclusion

This chapter has presented an application of a series of actual audit failures to the model. The failures were applied to the model in order to identify the errors which the model would or would not have prevented. On the basis of this analysis, some revisions should be made to the model. Regarding the model's inputs, background information should be augmented to include provisions for the misapplication of accounting principles and subsequent events.

The revised versions of the model's three levels of evidence are shown in Exhibit 7.4 (see page 262). Four changes have been made to the first level of evidence (valid evidential matter). First, real evidential matter has been expanded to include the

Exhibit 7.4 is in Appendix Four

three types of such evidential matter developed from the cases. Secondly, since the factor of firmness (FIRM) was relevant in cases involving both real and demonstrative evidential matter, this factor has been added to the authentication of demonstrative evidential matter. Third, the factor of integrity (INT) has been modified to emphasize this factor may be more important for authenticating the evidential matter which has originated from an entity outside the client's organization. Fourth, the factor of review (REV) has been expanded to recognize that the reviewer of workpapers should be neutral and possess all background information.

Regarding the second and third stages of evidence, the factors of objectivity (OBJ) and qualifications (QUAL) have been removed from negative conclusive evidence in order to recognize that financial statement assertions may be disconfirmed on the basis of common sense rather than on specialized knowledge.

Finally, it must be recognized that two parts of the model were not tested. First, there were no instances of timeliness (TIM) found in the audit cases. Secondly, the third and fourth sections of the model were tested from a negative perspective.

Endnotes

1 "Irregularities" were defined as misstatements resulting from intentional actions by the client's employees.

2 ASR's were the SEC's original pronouncements on accounting and auditing matters. These releases included announcements on SEC accounting related rules and regulations; enforcement actions; and descriptions audit and accounting failures. In 1982, the SEC commenced the promulgation of the AAER series, which contained only enforcement actions and descriptions of audit failures.

3 While surprisingly few errors were cited for failures to adequately investigate internal control, many errors were cited for failures to expand auditing procedures for known weaknesses in internal control. These errors are discussed in a later section.

4 These errors were found in ASR 173 (Talley), 227 (Western Properties), 241 (Fisco); AAER 12, 16 (Gelco), 16 (Litton), 18, 32, 39, 69, 92, 118.

5 These errors were found in ASR 210, 212, 292 (Mattel); AAER 2, 27, 76, 81, 86, 114, 115, 118.

6 This issue may also be viewed from the perspective of the financial statement assertion. The confirmation form is used by the auditor to verify two financial statement assertions: the existence of the customer and the accuracy of the receivable on the client's records. In effect, the auditor's selection of the customer from the client's records and the return of the confirmation from an independent entity may be seen as real evidential matter constituting the examination of external documentation by the auditor.

CHAPTER 8

SUMMARY AND CONCLUSIONS

8.0 Introduction

This chapter summarizes the study. This first section of the chapter summarizes the research objectives and methodology. The second section summarizes the model. The results are summarized in the third section. The fourth section presents the contributions. The final section discusses future research and alternative methodologies.

8.1 Research Issues and Methodology

Two research issues were addressed in the study. The first issue was that the accounting profession lacks a set of standards which can be used to assess evidential competence across a wide variety of audit situations. The second issue was that the profession lacks a framework of assessing evidential competence. In order to address these issues, two research objectives were stated in Chapter 1. The first objective was to develop the model. The second objective was to test the model.

A three step, normative methodology was used to develop the model. First, concepts of evidence from the

philosophy of science were used, in Chapter 4, to develop the model. Second, in Chapter 5, the conceptual foundation of the model was placed into an auditing context by using concepts of evidence from law as a basis of incorporating factors which affect the competence of evidential matter into the model. Third, the model's elements were defined, in Chapter 6, on the basis of Statements on Auditing Standards or deductive logic.

After the model was developed, it was tested by applying it to a series of audit failures, which were drawn from Accounting Series Releases and Accounting and Auditing Enforcement Releases published by the Securities and Exchange Commission (from 1975 through 1987). The purposes of applying the cases to the model were to determine whether the model could have prevented the error and to examine the consistency of the model's logic.

8.2 The General Model

The general model was summarized in Exhibit 5.6 (see page 158). The first component of the model is comprised of inputs, which constitute procedures the auditor should perform prior to investigating the financial statement assertion. Generally, the auditor should:

- (0.1) identify the financial statement assertion;
- (0.2) perform other procedures for obtaining background information, including;
 - I. possessing proper professional training, and;
 - II. investigating situational contingencies, including;
 - a) performing an adequate review of the client's control system, and;
 - b) examining other situational contingencies, such as;
 - 1- communicating with any predecessor auditor.
 - 2- conducting analytical review throughout the engagement.
 - 3- investigating going concern issues.
 - 4- investigating related party transactions.
 - 5- conducting the engagement with due professional care.

Also the auditor should:

- (0.3) choose an appropriate audit technique, and;
- (0.4) prepare working papers which document that all audit procedures have been performed.

After the inputs to the model, the first level of evidence, "valid evidential matter", is entered. The two types of evidential matter used in the model are real and demonstrative evidential matter. The evidential matter is real if the factor of directness (DIR) is present in the audit and demonstrative if directness (DIR) is not present.

Two criteria are used in first level of evidence. The first is AUTHENTICITY. For real evidential matter, this criterion is satisfied if the factors of identification (ID) and firmness (FIRM) and/or timeliness (TIM) are present. For demonstrative evidential matter, this criterion is satisfied if all of the factors of audit controls (AC), independence (IND), and integrity (INT) are present.

The second criterion, PROFESSIONAL AGREEMENT, is satisfied for both types of evidential matter if review (REV) is present. This factor is present if the evidential matter has been reviewed by an individual with technical qualifications similar to those of the

auditor. If both criteria are not met, "valid evidential matter" is not obtained and new evidential matter should be sought.

After "valid evidential matter", the second and third levels of evidence are "prima facie" and "conclusive" evidence. Both of these levels of evidence are expressed in negative and positive terms. In order to obtain negative prima facie evidence, both of the factors of initial relevance (IR) and negative relevance (NR) must be present. In order to obtain positive prima facie, only the factor of initial relevance (IR) must be present. If neither type of prima facie evidence is obtained, the evidential matter is irrelevant and should be discarded.

In order to obtain negative conclusive evidence, the factors of corroboration (CORR) and either objectivity (OBJ) or qualifications (QUAL) must be present. In order to obtain positive prima facie, the factors of internal control (IC), inherent contingencies (INH), and either objectivity (OBJ) or qualifications (QUAL) must be present. If negative conclusive evidence is obtained, the financial statement assertion should be rejected. If positive conclusive evidence is obtained, the financial statement assertion should be accepted. If conclusive evidence is not obtained, judgement on the financial statement assertion should be suspended until additional evidential matter can be obtained.

8.3 Results

The normatively developed model was tested by applying it to a series of audit failures. On the basis of this test, the model was modified (in Chapter 7). The results for the model's three components are discussed below.

8.31 Inputs

The model generally described the inputs in an adequate manner. The large number of audit failures caused by the absences of these inputs supported the emphasis placed by the model's foundation on background information. However, two shortcomings were found. First, too many errors were placed into the category of "due professional care". Secondly, errors related to "subsequent events" would not have been prevented by the model. In recognition of these weaknesses, the "due professional care" category should be expanded.

8.32 Level One: Valid Evidential Matter

In the first level of evidence, the factor of directness (DIR) is first used to determine whether the evidential matter is real or demonstrative.

Directness (DIR)

From the analysis audit failures, three categories of real evidential matter were formulated, which included: 1) internal documentation; 2) external documentation; 3) internal comparison. The development of these categories meant that the original definition of directness (DIR) was insufficiently precise.¹ In addition to real evidential matter, three categories of surrogates (demonstrative evidential matter) were formulated in Chapter 6 on a normative basis. These surrogates, which were in general descriptive, included management representations (explicit and implicit) and third party representations.

After determining the type of evidential matter, the first criterion, AUTHENTICITY, is examined. In order to authenticate real evidential matter, the factors of identification (ID) and firmness (FIRM) and/or timeliness (TIM) must be present.

Identification (ID)

Seven errors were associated with the absence of this factor. The implications of this factor depended on the type of evidential matter which was evaluated. If the real evidential matter consisted of external documentation, such as a bank statement, identification (ID) aided the auditor in ensuring that the item involved in the financial statement assertion satisfied some set of rules, such as the criteria for revenue recognition. If the real evidential matter consisted of an internal comparison, such as the comparison of two ledgers, identification (ID) aided the auditor in ascertaining that the item involved in the financial statement assertion physically existed. In two instances, this factor was related to demonstrative evidential matter, indicating a possible inconsistency.

Firmness (FIRM)

Three errors were related to this factor. In two of these cases, the

evidential matter was demonstrative. This finding demonstrated an inconsistency in the model: firmness (FIRM) is important for all types of evidential matter, regardless of whether it is comprised of a surrogate. The model was modified to reflect this finding.

Timeliness (TIM)

No errors were cited for the absence of this factor.

Review (REV)

Nine errors were associated with this factor, which was in general adequately described by the model.

In addition to examining the descriptiveness of the first level of evidence, two conclusions concerning the procedures were reached:

- 1) A close relationship exists between the factors of identification (ID) and independence (IND). For the two types of evidential matter, these

factors seem to ensure that evidential matter is the same item embodied in the financial statement assertion.

- 2) When the evidential matter is demonstrative (is a surrogate) and the factor of independence (IND) is not present, the auditor should obtain real evidential matter (which is a surrogate).

8.33 Level Two: Prima Facie Evidence

The second level of evidence is prima facie evidence. Negative prima facie evidence is obtained if the factors of initial relevance (IR) and negative relevance (NR) are present. Positive prima facie evidence is obtained if only initial relevance (IR) is present.

Initial Relevance (IR)

Nineteen errors were associated to the absence of this factor, which was in general well described. However, evidential matter was irrelevant not only when the auditor lacked "common

sense", but also when the auditor used an "assumption" as his evidential matter. Such assumptions were present when the auditor did not modify his procedures to reflect background information.

Negative Relevance (NR)

Twenty six errors were related to contradictory evidential matter. This factor was in general well described by the model.

8.34 Level Three: Conclusive Evidence

The third level of evidence consists of conclusive evidence. The factors necessary to obtain negative conclusive evidence include corroboration (CORR) and either objectivity (OBJ) or qualifications (QUAL).

Corroboration (CORR)

This factor was in general descriptive. The large numbers of errors caused by auditors' failures to obtain different types of evidential matter (rather than expand sample sizes)

implies that the type of evidential matter is as important to detecting errors than the sample size of one type of evidential matter.

Objectivity (OBJ) and Qualifications (QUAL)

The factors of objectivity (OBJ) and qualifications (QUAL) were irrelevant toward obtaining negative conclusive evidence; therefore, no specific technical qualifications were necessary to detect many of the errors in financial statements.

The factors necessary to obtain positive conclusive evidence include internal control (IC) and inherent contingencies (INH) and either objectivity (OBJ) or qualifications (QUAL).

Internal Control (IC) and Inherent Contingencies (INH)

The factors of internal control (IC) and inherent contingencies (INH) were considered twice in the model. The double treatment appeared to be correct:

background information related to these factors should first be considered for circumstances which should raise the auditor's professional skepticism and only subsequently be used to determine sample size and other planned audit procedures.

Objectivity (OBJ) and Qualifications (QUAL)

Objectivity (OBJ) and qualifications (QUAL) were in general descriptive. Sixteen errors were related to technical qualifications (QUAL). Two errors occurred even though this factor was present. In these cases, technical specialists erred in the application of Generally Accepted Accounting Principles.

In addition to examining the descriptiveness of the model, the procedures were also examined. Regarding these procedures:

a retroductive type of reasoning may be more important for obtaining negative conclusive evidence and inductive type

of reasoning may be more important toward obtaining positive conclusive evidence.

8.4 Contributions

As stated beforehand, the objectives of this research were twofold. The first objective, which was addressed through a normative methodology, entailed constructing the model. The second objective entailed testing the model by applying it to a series of actual audit failures. The work performed toward accomplishing each of these objectives made contributions to the literature.

8.41 Objective 1: Developing the Model

From a normative perspective, the work performed toward developing the model contributed to the 1970's research and to the Toba-Kissinger framework. As described in Chapter 2, three studies were performed in the 1970's. In the first of these studies, the American Accounting Association (1972) attempted to develop standards of competence by adapting perceptual concepts from the field of communications. In the second study, Kissinger (1974) attempted to develop standards by combining certain of the factor which affect the competence of evidential matter. In the final study,

Schandl (1978) emphasized the representational faithfulness of the evidential matter.

This research has contributed to the latter two of these studies. First, like Kissinger's work, this study combined certain of the factors which affect the competence of evidential matter; additionally, the standards were embodied into a procedural framework. Regarding Schandl's emphasis on representational faithfulness, this study focused on this aspect of evidential competence by emphasizing the authentication of evidential matter.

In addition to the contributions made to the 1970's studies, normative contributions were made to the Toba-Kissinger framework. As described in Chapter 2, Toba (1975) and Kissinger (1977) attempted to develop a model on the basis of concepts of evidence from the philosophy of science and law. This study has also used concepts from these fields; however, the current model differs from the Toba-Kissinger framework in two respects.

First, while the Toba-Kissinger framework focused on propositions examined, the present focuses on the evidential matter used to support the propositions. Secondly, the present model includes three phases which emphasize the situational context of the audit (the inputs); the validity of evidential matter (level one); and the support provided by the evidential matter for

the financial statement assertion (levels two and three).

8.42 Objective 2: Testing the Model

Contributions were also made in testing the model. First, many of the factors which affect the competence of evidential matter were more precisely defined than in the early studies. Second, the relationships of many of the factors which affect evidential competence were examined. Finally, from a descriptive standpoint, audit errors were described on a more detailed basis than in earlier studies.

8.5 Suggestions for Future Research and Alternative Methodologies.

Three facets of evidential matter in auditing require special attention in future research. First, as shown in Chapter 7, eleven errors were associated with failures to identify financial statement assertions; therefore, more research is needed toward understanding the nature of such assertions. Secondly, as discussed in Chapter 4, both objective and subjective concepts of probability have been espoused by philosophers of science. Much research in auditing, however, has tended to assume the evidence is a subjective concept². Future research should attempt to ascertain whether auditors'

evaluations of evidential matter are objective and/or subjective. Finally, since many errors were related to failures to obtain the correct types of evidential matter, more research should be performed into determining the effects of corroborating evidential matter.

Two alternative methodologies could also be used to develop the model. First, the model could be developed by applying it to the working papers of an actual audit. This methodology would be especially useful for examining the effects of accumulations of evidential matter on materiality. Secondly, the model could be developed by using the methodology developed by Stephens (1983) to test the descriptiveness of the Toba-Kissinger framework. As stated in Chapter 2, Stephens compared the opinions predicted the Toba-Kissinger framework for a series of hypothetical audit cases against the audit opinions rendered by actual auditors for the same cases. This methodology would be especially useful for ascertaining whether the procedures of the model are similar to auditors' decisions making processes

8.6 Conclusion

This research has represented an effort to develop a pragmatic model of the competence of evidential matter in auditing. While the model developed in this

study possessed certain inconsistencies, it may serve as a starting point toward developing a more systematic method for evaluating the competence of evidential matter. Moreover, the model possesses three major characteristics which, albeit seemingly obvious, have not been present in previous literature. These facets of the model are:

- 1) there is a clear separation between the situational context of the audit (background information) and the evidential matter being evaluated.
- 2) The process of evaluating evidential matter is separated into three logical steps including:
 - a) single pieces of evidential matter are validated;
 - b) single pieces of validated evidential matter are compared against the financial statement assertion in order to determine whether they are relevant;
 - c) single pieces of validated and relevant evidential matter are added to total bodies of evidential mat-

ter to formulate conclusions concerning the financial statement assertion.

- 3) the factors which affect the competence of evidential matter are embodied in the three steps shown in "2" above.

Further development of this framework will not only aid the development of audit practice, but may also help in developing more systematic methods for training auditors in evidence evaluation.

Endnotes

1 This weakness was especially apparent since real evidential matter was originally defined on a negative basis.

2 Examples of this research may be found in Mock and Holstrum (1985) and in the large body of literature concerned with the "anchoring" of auditors' prior probability assessments. Examples of the anchoring literature may be found in Kinney and Uecker (1982) or Joyce and Biddle (1982).

APPENDICES

Appendix One
Cases in the Study and
Summary of Results

This appendix lists the cases used in the study and summarizes the application of each case to the model. For each case, a description of the facts was prepared and applied to the model. As an example, the summary of facts and application of the model for Accounting and Auditing Series Release number 32 are provided in Exhibit A1 (see pages 290, 291).

The summaries were coded in a manner similar to the following, which is the summary (shown later in this appendix) for AAER 32:

--REAL: External Documentation.....NR*
--REAL: External Documentation.....IR
--DEM: 3rd Party (Opinion on GAAP).....QUAL*
.....INH

The type of evidential matter is shown in the left hand column. "DEM" symbolizes "demonstrative" evidential matter, which may include:

- 1) Implicit management representations (labelled as "Implicit MR" in the appendix), such as:
 - a) client supplied data (such as schedules examined by the client).

- b) management supplied documentation (such as bank statements supplied by management).
 - c) assumptions (by the auditor).
- 2) Explicit management representations (labelled as "Explicit MR" in the appendix), such as:
- a) statements by management
- 3) Statements by outside third parties (labelled as "3rd Party" in the appendix), such as:
- a) confirmations;
 - b) appraisals;
 - c) specialist opinions on GAAP.

"REAL" symbolizes "real" evidential matter, which may include:

- 1) Internal documentation, such as a direct examination by the auditor of the client's records on the basis of

the auditor's own direct personal knowledge.

- 2) External documentation, such as a direct examination of the client's financial statement records on the basis of external information obtained during the engagement.
- 3) Internal comparison, such as a direct comparison by the auditor of two pieces of information embodied in the client's financial statement records.

Returning to the summary provided above for AAER 32, the auditor examined two "real" pieces of evidential matter (consisting of two pieces of "external documentation") and one "demonstrative" piece of evidential matter (consisting of a "third party statement").

The right hand column of the summary shows the factors related to errors committed for each of the pieces of evidential matter. The key of factors has been provided in Exhibit 5.2 (see page 118). The factors of inherent contingencies (INH) and internal control (IC) are shown at the bottom of the summaries since these factors tended not to be associated with

specific pieces of evidential matter. On occasion, an error related to an input was committed. In such a situation, the word "input" appears.

Returning to the summary of AAER 32, an error related to negative relevance (NR) was associated with the first piece of evidential matter; an error related to initial relevance (IR) was associated with the second piece of evidential matter; and an error related to qualifications (QUAL) was associated with the third first piece of evidential matter. The summaries of all the cases start on page 292. Finally, an asterik (*) indicates an error which the model would not have prevented.

Exhibit A1
Example Summary of
Audit Failure and Application of
Case to Model

AAER 32
June 25, 1984
Auditor: A.M. Pullen and Co.
Client: Southeastern Savings and Loan
Industry: Savings and Loan

Facts

On a first time audit, the auditors attempted to verify whether an exchange of GNMA certificates by the client with another savings and loan constituted a wash sale, which would have permitted the client to defer a gain from the sale of securities. In order to qualify as a wash sale, the securities had to possess similar returns and estimated lives. As evidential matter to examine the similarity of returns, the auditors compared the yields of the two securities (as reported by the Wall Street Journal), and concluded that the returns were "different". As evidential matter to compare the estimated lives, the auditors compared the maturity dates of the securities, and concluded that the securities had different estimated lives. However, an AICPA position paper had stated that an auditor should compare the estimated redemption dates, given current market conditions.

Prior to the audit, the auditors had consulted with a predecessor auditor concerning the reason for a change of auditors. However, the auditors did not specifically inquire into the predecessor's disagreements with management concerning the accounting treatment for the transaction. Moreover, because securities had incurred a great deal of loss in market value, the predecessor auditor had felt that the exchange did not qualify as a wash sale. Finally, the auditors' firm possessed a consultation process for contentious accounting issues; however, the reviewing partner did not satisfactorily review the accounting issues (due to pressures to keep the engagement).

Application of Model

Regarding the comparison of the two yields of the securities, this constituted real evidential matter (external documentation) since the auditors compared the item involved in the financial statement assertion with external information found in a public document

(The Wall Street Journal). The relevant factor was negative relevance (NR) since the yields of securities were apparently different. However, while the model might have pointed out the absence of this relevant factor, it may not have prevented the error since the necessary degree of difference (in order to qualify as a wash sale) between the securities would not have been addressed by the model.

The comparison of the securities' maturity dates constituted real evidential matter (external documentation) since the auditors directly compared the these dates. The error may have been prevented in the second level of evidence (Prima facie) since the factor of initial relevance (IR) was not present in the audit situation. As stated by the AICPA Statement of Position, the estimated lives the securities was related to supply and demand factors, rather than formal maturity data.

In addition to the two real pieces of evidential matter, the auditors used demonstrative evidential matter (a third party statement) in consulting the specialist. However, this error would not have been detected at the third level of evidence (Conclusive Evidence) since the factor or qualifications (QUAL) was present in the audit situation but the technical specialist erred in judgement.

Finally, the auditors violated predecessor auditor (background information) by not inquiring into the securities transaction and they may have also violated due professional care since they failed to consult the statement of position in the first place.

ASR 173
July 2, 1975
Auditor: Peat Marwick and Mitchell
Client: National Student Marketing Corporation
Industry: Mass Marketing

--DEM: Implicit MR (Client Supplied Data).....IND
.....QUAL
--DEM: 3rd Party (Confirmation).....AC

ASR 173
July 2, 1975
Auditor: Peat Marwick and Mitchell
Client: Republic National Life Insurance Company
Industry: Insurance

--DEM: 3rd Party (Appraisal).....QUAL
.....REV
.....INH

ASR 173
July 2, 1975
Auditor: Peat Marwick and Mitchell
Client: Talley Industries
Industry: Defense Contractor

--DEM: Implicit MR (Client Supplied Data).....IND
.....QUAL

ASR 173
July 2, 1975
Auditor: Peat Marwick and Mitchell
Client: Penn Central
Industry: Railroad/Conglomerate

--DEM: Explicit MR (Statement).....IND
.....QUAL
--DEM: Explicit MR (Statement).....IND
.....QUAL
--DEM: Explicit MR (Statement).....IND
--DEM: Explicit MR (Statement).....IND
--DEM: Explicit MR (Statement).....IND
.....INH

*Denotes an error which would not have been prevented by the model.

ASR 173
July 2, 1975
Auditor: Peat Marwick and Mitchell
Client: Stirling Homex
Industry: Home Manufacturer

--DEM: 3rd Party (Confirmation).....NR
--DEM: Implicit MR (Management Supplied
Documentation).....IND
.....FIRM*
--DEM: 3rd Party (Confirmation).....NR
.....INH

ASR 196
March 30, 1976
Auditor: Seidman and Seidman
Client: Equity Funding
Industry: Finance Company

--DEM: 3rd Party (Confirmation).....AC
--DEM: 3rd Party (Confirmation).....IND*

ASR 196
March 30, 1976
Auditor: Seidman and Seidman
Client: Cenco
Industry: Health Supplies

--DEM: Implicit MR (Inventory).....IND
.....AC
--REAL: Internal Documentation.....NR
--DEM: Explicit MR (Statement).....IND
.....INH

ASR 196
March 30, 1976
Auditor: Seidman and Seidman
Client: OMNI RX
Industry: Health Management

--DEM: Implicit MR (Management Supplied
Documentation).....IND
.....NR

ASR 196
March 30, 1976
Auditor: Seidman and Seidman
Client: SaCom
Industry: Defense Contractor

--DEM: Implicit MR (Client Supplied Data).....IND
.....QUAL
.....INH

ASR 210
February 25, 1977
Auditor: Reich, Weiner, and Co.
Client: Wolins Pharmaceutical Corp.
Industry: Pharmaceutical Manufacturer

--REAL: Internal Comparison.....AC
--REAL: External Documentation.....NR

ASR 212
April 18, 1977
Auditor: Testa and Stebbins
Client: Photon Pacer
Industry: Photo Equipment

--DEM: Explicit MR (Statement).....AC
.....IND
--DEM: Explicit MR (Statement).....IND
.....NR
.....AC
--REAL: External Documentation.....ID

ASR 227
September 21, 1977
Auditor: Laventhol and Horwath
Client: Cosmopolitan Investor Funding Co.
Industry: Investment Co.

--REAL: External Documentation.....NR
--DEM: Explicit MR (Statement).....IND
.....INH

ASR 227
September 21, 1977
Auditor: Laventhol and Horwath
Client: Western Properties Limited
Industry: Real Estate Developer

--REAL: External Documentation.....NR
.....IC

ASR 227
September 21, 1977
Auditor: Laventhol and Horwath
Client: Co-Build
Industry: Real Estate Developer

--DEM: Implicit MR (Client Supplied Data).....IND
--DEM: Implicit MR (Client Supplied Data).....IND
.....QUAL
--DEM: Explicit MR (Statement).....IND
.....NR

ASR 233
December 12, 1977
Auditor: Norman A. Weiner, CPA
Client: Aberdeen Securities Corporation
Industry: Registered Broker/Dealer

--DEM: Explicit MR (Statement).....IND
.....INH

ASR 238
January 16, 1978
Auditor: Price Waterhouse
Client: National Telephone Co.
Industry: Telephone Leasing

--DEM: Implicit MR (Management Supplied
Documentation).....IND*
.....QUAL
--DEM: Implicit MR (Client Supplied Data).....IND

ASR 241
February 10, 1978
Auditor: Haskins and Sells
Client: Fisco, Inc.
Industry: Casualty Insurance Company

--DEM: Implicit MR (Client Supplied Data).....IND
.....QUAL
--REAL: Internal Documentation.....IR
--DEM: 3rd Party (Legal statement).....NR

ASR 241
February 10, 1978
Auditor: Haskins and Sells
Client: Falstaff Brewing Co.
Industry: Brewery

--DEM: Explicit MR (Management Representation
Letter)IND
--DEM: Implicit MR (Assumption).....IR
.....IND

ASR 283
October 30, 1980
Auditor: Norlin G. Boyum.
Client: Shaughnessy and Co.
Industry: Registered Broker/ Dealer of Securities

.....INH

ASR 285
January 7, 1981
Auditor: Lester Witte & Co.
Client: Lippincott
Industry: Textbook publisher

--DEM: 3rd Party (Confirmation).....AC
--DEM: Explicit MR (Statement).....IND
.....REV
.....IC

ASR 288
February 26, 1981
Auditor: Kenneth Leventhal and Co.
Client: Emerson's
Industry: East Coast Restaurant Chain

--DEM: Implicit MR (Assumption).....IND
.....IR
--DEM: Implicit MR (Assumption).....IR
.....IND
.....AC
.....REV
--REAL: Internal Documentation.....IR
--DEM: Implicit MR (Assumption).....IND
.....IR
--REAL: Internal Documentation.....ID

ASR 292
June 22, 1981
Auditor: Arthur Andersen and Co.
Client: Geon, Inc.
Industry: Auto Parts

--REAL: Internal Documentation.....IR
--REAL: Internal Documentation.....IR

ASR 292
June 2, 1981
Auditor: Arthur Andersen and Co.
Client: Mattel, Inc.
Industry: Toy Manufacturer

--REAL: External Documentation:.....FIRM
--REAL: Internal Comparison.....NR
.....INH
--REAL: Internal Comparison.....NR
.....INH
--REAL: Internal Documentation.....IR
--DEM: 3rd Party (Appraisal).....NR

AAER 2
August 18, 1982
Auditor: Louis Pokat
Client: Hermantite Corp.
Industry: Electronics Supplier

--DEM: Implicit MR (Assumption).....IR
.....IND
--REAL: Internal Documentation.....Input
--DEM: 3rd Party (Confirmation).....NR
.....REV

AAER 12
August 9, 1983
Auditor: Coopers and Lybrand
Client: Security America
Industry: Insurance

--DEM: Implicit MR (Assumption).....IR
.....IND
--DEM: 3rd Party (Appraisal).....QUAL
.....REV
--DEM: Implicit MR (Client Supplied Data).....IND

AAER 13
September, 22, 1983
Auditor: Stanley I. Goldberg
Client: J.B. Hanuaer and Company
Industry: Finance Company

-- REAL (Internal Comparison).....ID

AAER 16
November 14, 1983
Auditor: Touche Ross
Client: GELCO
Industry: Truck leasing

--DEM: Explicit MR (Statement).....IND
.....AC

AAER 16
November 14, 1983
Auditor: Touche Ross
Client: Litton
Industry: Defense Contractor

--DEM: 3rd Party (From Government).....NR

AAER 18
December 9, 1983
Auditor: Murphy, Hauser, O'Conner and Quinn
Client: Mr. Discount
Industry: Securities Broker

--REAL: External Documentation.....NR
.....IC
.....INH

AAER 27
April 5, 1984
Auditor: Fox and Co.
Client: Apex Computer
Industry: Computer Leasing Co.

--DEM: Implicit MR (Client Supplied Data).....IND
--REAL: External Documentation.....NR
--REAL: External Documentation.....NR
--DEM: Explicit MR (Failure to Send Second
Confirmation).....IND

AAER 29
May 1, 1984
Auditor: Willie L. Mayo
Client: World Wide, Inc.
Industry: Energy

--REAL: External Documentation.....IR
.....AC
--REAL: External Documentation.....IR
--DEM: Implicit MR (Management Supplied
Documentation).....IND
.....IC

AAER 30
May 21, 1984
Auditor: Thomas H. Wilson, C. Franklin Pollard, Jr.
Client: Doughtie's Food Products, Inc.
Industry: Food Products

--DEM: Implicit MR (Inventory).....IND
.....AC
.....IC

AAER 32
June 25, 1984
Auditor: A.M. Pullen and Co.
Client: Southeastern Savings and Loan
Industry: Savings and Loan

--REAL: External Documentation.....NR*
--REAL: External Documentation.....IR
--DEM: 3rd Party (Opinion on GAAP).....QUAL*
.....INH

AAER 39
September 10, 1984
Auditor: Smith and Stephens Accountancy Corporation
Client: Ajax, Inc.
Industry: Hardware

--DEM: Explicit MR (Statement).....IND
.....AC
--DEM: Explicit MR (Statement).....IND
.....AC
.....INH

AAER 45
September, 27, 1984
Auditor: Coopers and Lybrand
Client: Digilog
Industry: Electronics Manufacturer

DEM: 3rd Party (Opinion on GAAP).....QUAL*
.....REV

AEER 46
December 24, 1984
Auditor: Hans V. Andersen Jr.
Client: Great American Financial Corporation
Industry: Finance Company

--DEM: Explicit MR (Statement).....IND

AAER 53
April 15, 1985
Russell G. Davy
SNG
Industry: Energy Research

--DEM: Implicit MR (Management Supplied
Documentation).....IND
.....NR

AAER 60
June 11, 1985
Auditor: Kay L. Anderson, CPA
Client: Advanced Chemical Corporation
Industry: Chemicals

All Inputs

AAER 62
June 20, 1985
Auditor: Price Waterhouse and Co.
Client: AM International, Inc.
Industry: International Office Products Co.

.....INH
.....REV

AAER 69
August 12, 1985
Auditor: David G. Rogers
Client: American Davey
Industry: Oil (Energy)

--DEM: 3rd party (Confirmation).....AC
.....IND*
.....NR

AAER 71
August 29, 1985
Auditor: Weinaug and Co.
Client: Promotion
Industry: Energy Development

--DEM: Explicit MR: (Statement).....IND

AAER 76
September 26, 1985
Auditor: Scheonfield and Mendelsohn
Client: Rynco
Industry: Contact lens manufacturer

--DEM: Implicit MR (Inventory).....IND
--DEM: 3rd Party (Confirmation).....ID*
.....NR

AAER 78
October 10, 1985
Auditor: Seidman and Seidman
Client: Chronar, Inc. Rynco
Industry: Manufacturer of photo equipment.

--DEM: Implicit MR (Management Supplied
Documentation).....IND
.....NR
.....REV
.....INH

AAER 81
December 5, 1985
Auditor: Fox and Co.
Client: Flight Transportation
Industry: Airline Charter Corporation

--DEM: Implicit MR (Management Supplied
Documentation)IND
.....AC
--DEM: Implicit MR (Management Supplied
Documentation).IND
.....FIRM*
.....IR
.....AC
--REAL: External Documentation.....ID
.....AC
.....REV
.....INH

AAER 83
December 26, 1985
Auditor: Lary Snodgrass, CPA
Client: GEC
Industry: Energy

--REAL: (External Documentation).....AC
.....IR

AAER 85
January 21, 1986
Auditor: Gary L. Jackson, CPA
Client: American Real Estate Investment Trust
Industry: Real Estate

--DEM: 3rd Party (Appraisal).....QUAL
.....INH

AAER 86
February 10, 1986
Auditor: Fratz, Warrick, Strack, and Associates
Client: Computer Business Supplies, Inc.
Industry: Printing

--DEM: Explicit MR (Statement).....IND

AAER 67
July, 11, 1985
Auditor: Winter and Co.
Client: Cymaticolor
Industry: Manufacturer of Photographic Equipment

--DEM: Explicit MR (Statement).....IND
--DEM: Explicit MR (Statement).....IND

AAER 92
March 26, 1986
Auditor: Ronald P. Harrington
Client: Diversified Tech, Inc.
Industry: Chemicals (Generally)

--REAL: External Documentation.....IR
.....ID

AAER 106
June 25, 1986
Auditor: William Gelfond
Client: Worldwide, Inc.
Industry: not determine

--DEM: Explicit MR (Statement).....IND

AAER 114
September 24, 1986
Auditor: Albert Jacobs CPA
Client: Worldwide, Inc.
Industry: Energy (Coal) Truck leasing

--DEM:Implicit MR (Client Supplied Data).....IND
.....QUAL
.....INH

AAER 115
October, 10, 1986
Auditor: Huber, Erickson, and Butler
Client: Quantum Financial Services
Industry: Financial Consultants

--DEM: Explicit MR (Statement).....IND
--DEM: 3rd Party (Confirmation).....NR
--REAL: External Documentation.....Input

AAER 118
October 16, 1986
Auditor: Alexander Grant and Co.
Client: The ESM Companies
Industry: Securities

--DEM 3rd Party (Confirmation).....ID*
.....INH

AAER 127
January 28, 1987
Auditor: Fox and Co.
Client: Saxon Industries, Inc.
Industry: Office Equipment/ Supplies

--DEM: Implicit MR (Inventory).....IND
.....AC
--DEM: Implicit MR (Assumption).....IND
.....IR
.....IC

AAER 129
March 25, 1987
Auditor: Main Hurdman
Client: First National Bank of Midland
Industry: Banking

DEM: Third Party Statement (Appraisal).....NR
REAL: External Documentation.....QUAL
DEM: Third Party Statement (From Partners).....IND
.....INH

AAER 159
September 29, 1987
Auditor: Fox and Co.
Client: Teldata
Industry: Telecommunications Manufacturer

--DEM: Explicit MR (Statement).....IND

AAER 161
September, 30, 1987
Auditor: Neal Rasmussen, CPA
Client: Magma Energy and Petroleum
Industry: Energy

--DEM: Implicit MR (Client Supplied Data).....IND
.....QUAL

Appendix Two

Errors Related to Inputs

* Denotes Accounting Series Release

(0.1) Financial Statement Assertion

- 173*- In many instances, the auditor failed to test whether revenue recorded by the client was realizable. (Stirling Homex)
- 196*- The auditor did not attempt to determine whether accounts receivable were bona-fide. (Equity Funding)
- 241*- The auditor performed a clerical test of accuracy without attempting to determine the rate of renewal of certain insurance policies. (Fisco)
- 288*- For a deferral of advertising costs, the auditor performed clerical tests without ascertaining whether a future benefit was associated with the costs.
- 288*- For certain construction costs, the auditor performed an analytical review for reasonableness without determining whether the costs should be capitalized.
- 292*- In examining whether a breakeven point was accurate, the auditor tested clerical accuracy without verifying the reasonableness of the costs entered into the calculation.
- 60- The auditor failed to ascertain whether certificates of deposit were pledged.
- 69- In auditing accounts receivable, the auditor confirmed existence without auditing realizability.
- 83- The auditor failed to ascertain whether the client had been forgiven of major debt.
- 92- In attempting to ascertain whether specific research and development costs were for alternative future uses, the auditor examined who the cash was paid to but not the purpose of the payment.

- 115- The auditor failed to extensively investigate whether a mortgage was assumable.

(0.2) Background Information

I- Professional Training

- 173*- The auditor lacked an understanding of a specialized accounting method used by defense contractors. (Talley Industries).
- 196*- The auditor permitted unsupervised juniors and a summer intern to perform major portions of an inventory audit. (Cenco)
- 241*- A staff auditor did not possess insurance industry experience. (Fisco)
- 285*- The audit staff was poorly supervised.
- 288*- Inadequate supervision lead a junior to ignore a major step in the audit program.
- 18- The auditor failed to instruct the audit staff.
- 27- The engagement manager was not properly supervised.
- 29- The auditor's practice consisted only of tax and write-up work.
- 30- The staff accountants were not properly supervised during an audit of inventory.
- 62- The auditor failed to supervise the audit staff.
- 106- The CPA had never performed an audit
- 118- The auditor's staff was inexperienced in auditing broker/dealers and was poorly supervised. (two errors)

II. Other Situational Contingencies

a) Internal Control

- 196*- The auditor failed to obtain adequate knowledge of client's receivable system. (Equity Funding).
- 196*- The auditor failed to investigate internal controls for inventory. (Cenco)

- 210*- The auditor failed to investigate internal controls for inventory.
- 212*- The auditor failed to investigate internal controls for receivables.
- 285*- The auditor conducted an inadequate investigation of internal controls for accounts receivable.
- 288*- The auditor failed to obtain an adequate understanding of the client's accounts payable system.
- 2- The auditor failed to obtain an understanding of the control system for cash.
- 76- The auditor failed to conduct an investigation of the client's inventory system.

b) Other Situational Contingencies

1) Predecessor Auditor

- 173*- The auditor failed to determine the nature of two predecessor auditors' disagreements with management. (Republic)
- 283*- The auditor purchased and reviewed the working papers of the predecessor but failed to investigate the reason for the changes of two predecessor auditors.
- 27- The auditor failed to inquire into the reasons for the change of auditors.
- 32- The auditor failed to determine the nature of the predecessor auditor's disagreements with management.
- 106- The auditor failed to inquire into the reasons for the change of auditors.

2) Analytical Review

- 292*- The auditor failed to perform an overall review of sales. (Mattel)

3) Going Concern

- 86- The auditor failed to investigate consecutive net losses by a major subsidiary of the client.

- 106- The auditor failed to investigate the causes behind suspension of trading of the client's stock.

4) Related Party Transactions

- 173*- The auditor failed to investigate transactions wherein the client sold an insolvent subsidiary to employees of the client. (National Student Marketing Corporation)
- 173*- The auditor failed to investigate many circumstances indicating related party transactions. (Republic)
- 196*- The auditor failed to investigate unusual receivables transactions between the client and a related party. (OMNI)
- 227*- The auditors' failure to understand that the client's acting as an agent rather than a principal (for another entity) resulted in an overstatement of assets and liabilities on the client's balance sheet. (Western Properties)
- 227*- The auditor failed to require the client to record the substance, rather than the form, of many sham related party transactions. (Co-Build)
- 283*- The auditor failed to investigate many circumstances indicating related party transactions.
- 27- The auditors were aware of many related party transactions but failed to require disclosure.
- 39- The auditor failed to investigate many questionable entries to accounts receivable between the client and companies controlled by the client's president.
- 46- The auditor failed to investigate purchases by the client from an officer of the client.
- 71- The auditor ignored many transactions with an insolvent related party.
- 115- The auditor ignored that the client had purchased assets at a price below market value.
- 159- The auditor ignored that the client had issued stock at below the market price.

161- The auditor failed to investigate numerous transactions between the client and other entities controlled by an officer of the client.

5) Due Professional Care

- 173*- The auditor permitted the client to record a gain on the sale of properties which was, in substance, an exchange of similar assets. (Penn Central)
- 173*- The auditor allowed the client to record a dividend in kind on a transaction for which the financial position of the client had not changed. (Penn Central)
- 173*- The auditor failed to recognize that a sale of properties had not occurred (in substance) because the client had not transferred the risk of loss and had not relinquished control over the properties. (Penn Central)
- 173*- The auditor failed to require a write-down of an investment which had little value. (Penn Central)
- 173*- The auditor did not investigate the proper utilization of a special accounting method for fixed fee contracts for defense contractors. (Talley)
- 196*- The auditor failed to review the working papers of a CPA firm it had recently acquired. (SaCom & Equity Funding)
- 210*- The auditor failed to obtain an understanding of the client's inventory counting procedures.
- 212*- The auditor failed to perform basis audit procedures for receivables.
- 227*- The auditor knowingly permitted the client to prepare comparative financial statements on an inconsistent basis. (Western Properties)
- 227*- The auditor allowed the client to record revenue on a sale for which purchaser could not afford the down payment. (Co-Build).
- 241*- The auditor failed to obtain an understanding of APB 16 and an AICPA Industry Audit Guide. (Fisco)

- 285*- The auditor failed to review a contract (as a subsequent event) which showed the the client should have substantially reduced a receivable.
- 292*- The auditor failed to obtain an adequate understanding of the client's billing system. (Mattel)
- 2- The auditor failed to gain an adequate understanding of the client's inventory counting procedures.
- 12- The auditor failed to examine the previous year's working papers and communicate with the previous year's engagement partner.
- 12- The auditor failed to consult the appropriate accounting literature (AICPA SOP 87-6) concerning the accounting treatment for inflation on workmen's compensation liability of an insurance company.
- 16- The auditor failed to investigate the appropriate accounting treatment for a discount unique to the trucking industry. (Gelco)
- 16- The auditors allowed the client to charge costs to a government contract which were not reasonably related to the contract. (Litton)
- 18- The auditor failed to use the proper accounting treatment for the security positions of a brokerage firm.
- 27- The auditor failed to perform basic procedures for auditing cash.
- 32- The auditor permitted the client to record an exchange of securities as a wash sale even though such treatment violated GAAP.
- 67- The auditor failed to investigate many unusual cash payments to the client after year end.
- 39- The auditor failed to investigate the proper accounting treatment for a business combination.
- 69- The auditor failed to investigate the proper accounting treatment for certain items on consignment.

- 45- The auditor failed to require consolidated financial statements even though the client effectively controlled another company (through means other than stock ownership).
- 76- The auditor failed to perform a cut-off test for sales.
- 81- The auditor failed to obtain an adequate understanding of the client's organization.
- 86- The auditor failed to investigate whether a buyer's refusal to guarantee a sale nullified a sale recorded on the books of the client.
- 92- The auditor failed to investigate the proper accounting treatment for a business combination.
- 114- The auditor failed to read information contained in a registration form filed with the Securities and Exchange Commission.
- 115- The auditor failed to communicate with an associate who had resigned but who had performed most of the engagement.
- 115- The auditor failed to read a contract showing that the client had overvalued certain stock options.
- 118- A tax accountant realized that the client was insolvent and wrote a memo stating this fact; the auditor ignored the memo.
- 118- A tax accountant became aware that the auditor lacked independence but failed to inform the appropriate personnel.
- 118- The auditor failed to heed warnings of the firm's tax department that the client's provision for deferred taxes was inadequate.
- 118- The auditor failed to obtain an appropriate understanding of the AICPA industry audit guide, Audits of Brokers and Dealers in Securities.
- 118- The auditor ignored the procedures in his own audit program for auditing many extensive related party transactions.

(0.3) Audit Technique

- 196*- The auditor used a "canned" audit program for inventory. (Cenco)

- 12- The auditor used an inadequate audit program for the procedural testing of insurance claims.
- 18- The auditor used a generalized audit program for brokerage firms.
- 127- The audit program failed to reflect many "red flags" known to the auditor.

(0.4) Working Papers

- 173*- The auditor's documentation was generally inadequate. (Republic)
- 30- The auditors failed to document their discovery of many missing inventory count sheets.
- 67- A general lack of working paper quality was cited numerous times in this report.
- 76- The working papers consisted of a signed audit program.

Appendix Three

Errors Caused by Failures to
Expand Audit Procedures to
Known Weaknesses in the Client

* Denotes Accounting Series Release

Internal Control (IC)

- 227*- The auditor failed to expand audit procedures to consider that the client's records consisted solely of a check register. (Western Properties)
- 285*- The auditor failed to expand audit procedures for known weaknesses in the control system for accounts receivable.
- 18- The auditor failed to consider that the client lacked seven of thirteen controls specified in an Industry Audit Guide.
- 29- The auditor ignored that the client's records consisted solely of a check register.
- 30- The auditor failed to expand audit procedures for known weaknesses in the control system for inventory.
- 127- The auditor failed to expand audit procedures for known weaknesses (obtained in the previous year) in the control system for inventory.

Other Situational Contingencies (INH)

- 173*- The auditor ignored that the client continuously recognized revenue before it was realizable. (Penn Central)
- 173*- The auditor ignored that the client continuously recognized revenue before it was realizable. (Stirling Homex)
- 173*- The auditor ignored that the client was engaging in related party transactions in order to hide investments in an insolvent subsidiary. (Republic)
- 196*- The auditor failed to expand audit procedures for management's inability to produce evidential matter. (Cenco)

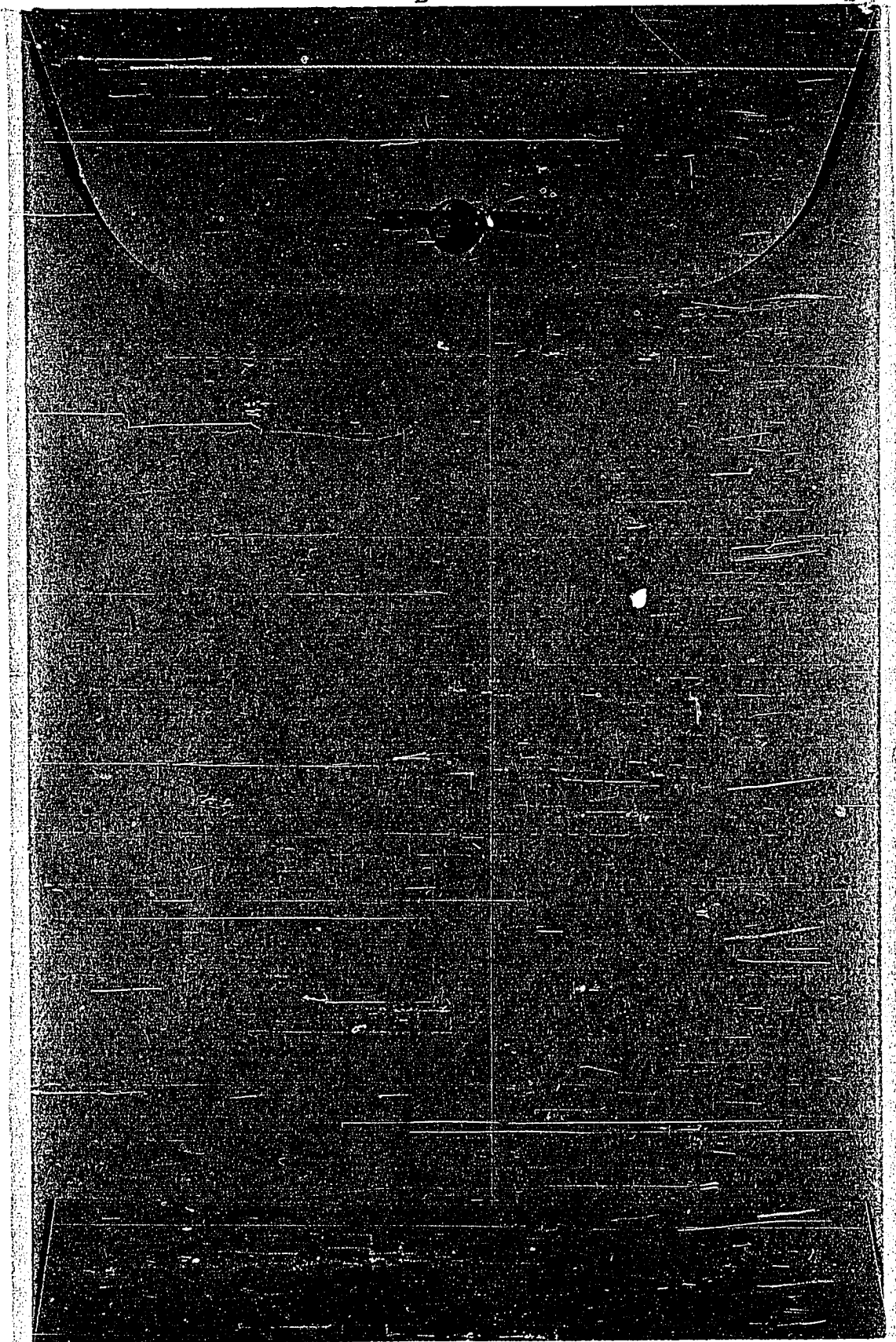
- 196*- The auditor failed to expand audit procedures for 1) management's inability to produce evidential matter; 2) client overbillings, and; 3) fraudulent journal entries. (SaCom)
- 227*- The auditor failed to expand audit procedures in order to consider that the client had purchased a major asset from a known embezzler. (Cosmopolitan)
- 233*- The auditor failed to expand audit procedures in consideration of the client's serious financial troubles.
- 283*- The auditor failed to expand audit procedures to consider many questionable bank transfers by the client.
- 292*- The auditor failed to expand audit procedures to consider the client's efforts at overstating inventory. (Mattel)
- 292*- The auditor failed to expand audit procedures to consider management's constant efforts to improperly defer expenses. (Mattel)
- 18- The auditor ignored that the client consistently failed to cooperate during the audit.
- 32- The auditor ignored many contentious issues between a predecessor auditor and the client.
- 39- The auditor ignored that the client was attempting to acquire a shell corporation in order to improperly step up the value of certain assets.
- 62- The auditor ignored that tight "management by objective" standards were causing the client's employees to exaggerate operating results.
- 78- The auditor failed to respond to many transactions which indicated that the client was improperly recognizing revenue.
- 81- The auditor failed to consider abrupt changes in the client's organization structure.
- 85- The auditor ignored that the client had recorded funds controlled by the client's bank as a "receivable".

- 114- The auditor ignored substantial increases in the assets and income of the client.
- 118- The auditor ignored that the client was in deep financial trouble.
- 129- The auditor ignored that the client was a Texas bank in financial trouble (due to the collapsing oil market) and was engaging in a questionable sale/leaseback transaction.

-316-
A

Appendix Four

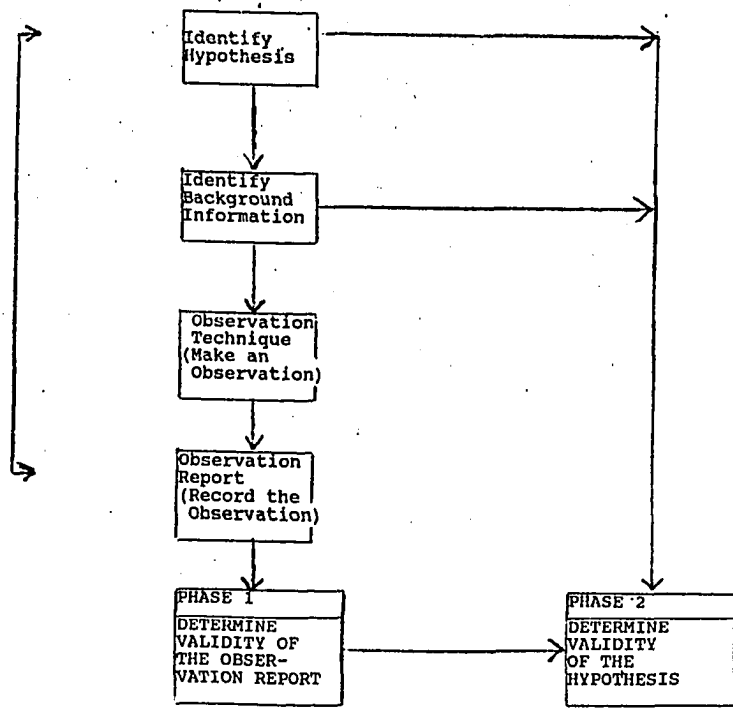
Oversized Diagrams



The Model's Inputs

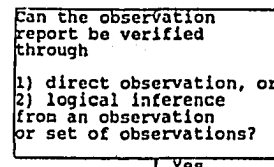
INPUTS

PHASES



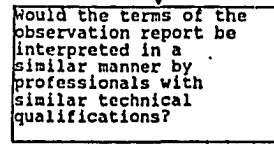
Criteria:

VERIFIABILITY



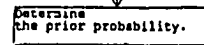
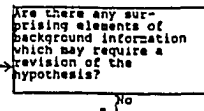
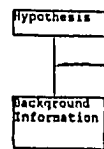
Phase One: Determine Validity of the Observation Report

PROFESSIONAL AGREEMENT

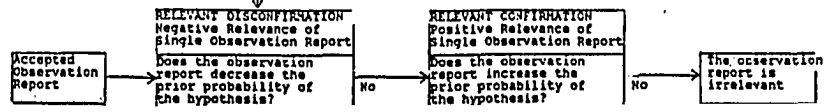


EXAMINE BACKGROUND INFORMATION

INPUTS



DETERMINE RELEVANCE



Criteria:

VERIFIABILITY

Phase One: Determine Validity of the Observation Report

PROFESSIONAL AGREEMENT

Can the observation report be verified through
 1) direct observation, or
 2) logical inference from an observation or set of observations?

Would the terms of the observation report be interpreted in a similar manner by professionals with similar technical qualifications?

Reject the observation report and search for a new observation report by returning to observation technique.

Accept the Observation Report

Phase Two: Determine Validity of the Hypothesis

EXAMINE BACKGROUND INFORMATION

INPUTS

Hypothesis
 Background Information

Are there any surprising elements of background information which may require a revision of the hypothesis?

Revise the hypothesis and return to phase one

Determine the prior probability.

DETERMINE RELEVANCE

Accepted Observation Report

RELEVANT DISCONFIRMATION
 Negative Relevance of Single Observation Report
 Does the observation report decrease the prior probability of the hypothesis?

RELEVANT CONFIRMATION
 Positive Relevance of Single Observation Report
 Does the observation report increase the prior probability of the hypothesis?

The observation report is irrelevant

DETERMINE EVIDENTIAL SUPPORT

ABSOLUTE DISCONFIRMATION
 Accumulation of Observation Reports
 Probability: Would a rational individual believe that there is a high probability (near 1) that the hypothesis is not true?
 and
 Rationality: Would a rational individual attribute the high probability to the observation report?

ABSOLUTE CONFIRMATION
 Accumulation of Observation Reports
 Probability: Would a rational individual believe that there is a high probability (near 1) that the hypothesis is true?
 and
 Rationality: Would a "rational" individual attribute the high probability to the observation report?

Reject the hypothesis

Suspend judgment on the hypothesis

Accept the hypothesis

DECIDE ON HYPOTHESIS

Exhibit 4.5: A Summary of the Model's Foundation

EXAMINE
BACKGROUND
INFORMATION

Financial
Statement
Assertion

Background
Information

PROFESSIONAL SKEPTICISM
(SURPRISING EVENTS)
Are there any circum-
stances in back-
ground
information which require
the auditor to raise
his level of
professional skepticism?

AUDIT RISK
(PRIOR PROBABILITY)
Determine the likelihood
that the financial state-
ment assertion is mis-
stated.

Valid
Evidential
Matter

INITIAL RELEVANCE
Does the type of
evidential matter
have the potential to
change the initial
audit risk
associated with the
financial statement
assertion?

DETERMINE
RELEVANCE

Discard the
evidential
matter

NEGATIVE RELEVANCE
Are there many
instances of evidential
matter which
contradict the
financial statement
assertion?

Search for corroborating
evidential matter

DETERMINE
EVIDENTIAL
SUPPORT

Positive Evidence
Body of Evidential Matter
(ABSOLUTE CONFIRMATION)
PROBABILITY:
Are the factors of
Internal Control (IC) and
Inherent Cont (INH)
present?
AND
RATIONALITY:
Are either of the factors
of Objectivity (OBJ)
or Qualifications (QUAL)
present?

Negative Evidence
Body of Evidential Matter
(ABSOLUTE DISCONFIRMATION)
PROBABILITY:
Is the factor of
Corroboration (CORR)
present?
AND
RATIONALITY:
Are either of the factors
of Objectivity (OBJ)
or Qualifications (QUAL)
present?

Level 2: Prima Facie.....

DECIDE ON
FINANCIAL
STATEMENT
ASSERTION

Suspend judgment
on the
financial
statement
assertion
and search for
corroborating
evidential
matter by
returning to
phase one.

DETERMINE RELEVANCE

Does the matter have the potential to change the initial audit risk associated with the financial statement assertion?
NO → Discard the evidential matter

YES
NEGATIVE RELEVANCE
Are there many instances of evidential matter which contradict the financial statement assertion?
YES → Search for corroborating evidential matter
NO → Positive Evidence Body of Evidential Matter (ABSOLUTE CONFIRMATION)

Search for corroborating evidential matter

DETERMINE EVIDENTIAL SUPPORT

Positive Evidence Body of Evidential Matter (ABSOLUTE CONFIRMATION)
PROBABILITY:
Are the factors of Internal Control (IC) and Inherent Cont (INH) present?
AND
RATIONALITY:
Are either of the factors of Objectivity (OBJ) or Qualifications (QUAL) present?

Negative Evidence Body of Evidential Matter (ABSOLUTE DISCONFIRMATION)
PROBABILITY:
Is the factor of Corroboration (CORR) present?
AND
RATIONALITY:
Are either of the factors of Objectivity (OBJ) or Qualifications (QUAL) present?

Level 2: Prima Facie.....

DECIDE ON FINANCIAL STATEMENT ASSERTION

Suspend judgment on the financial statement assertion and search for corroborating evidential matter by returning to phase one.

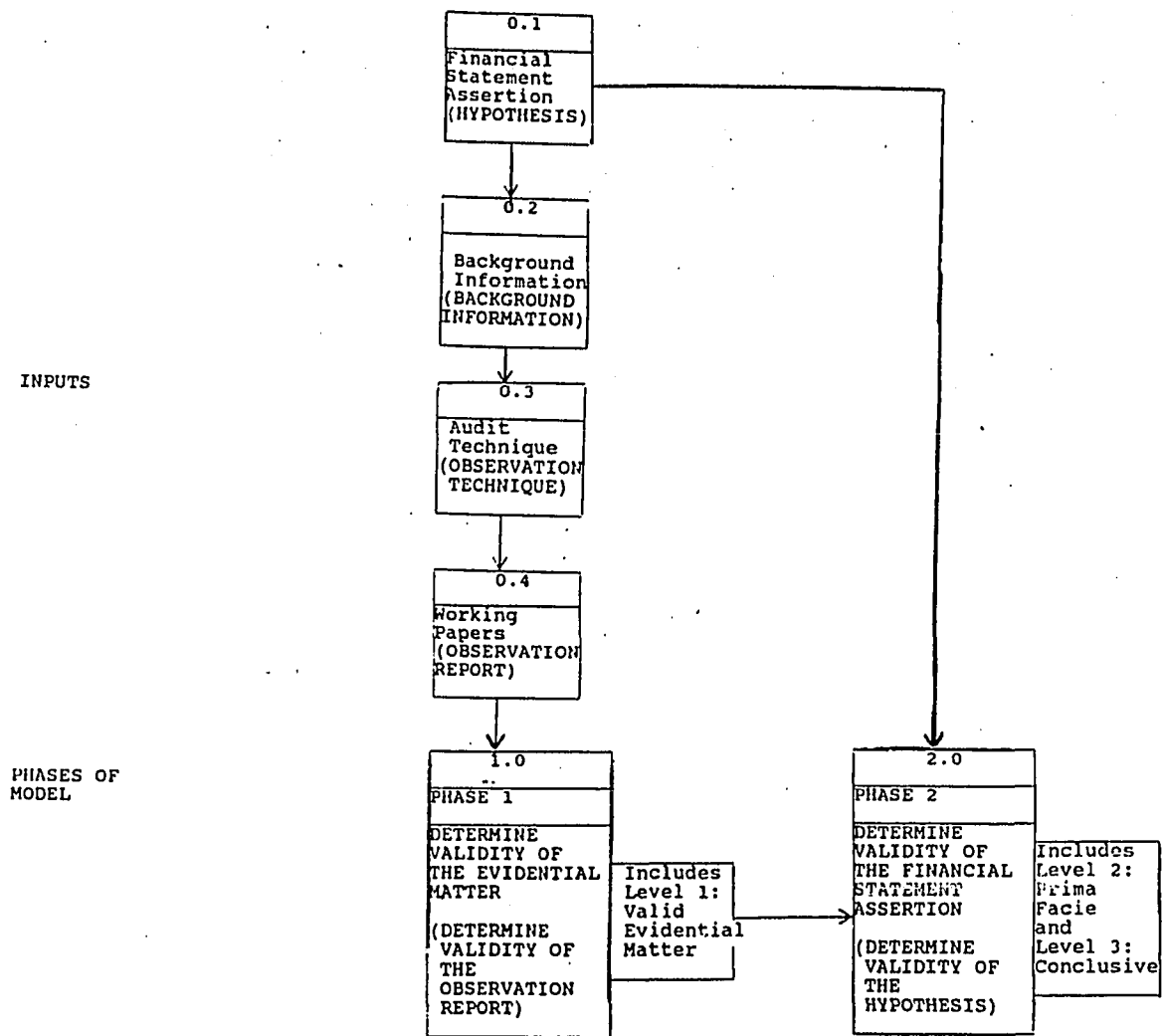
Level 3: Conclusive.....

Accept the financial statement assertion

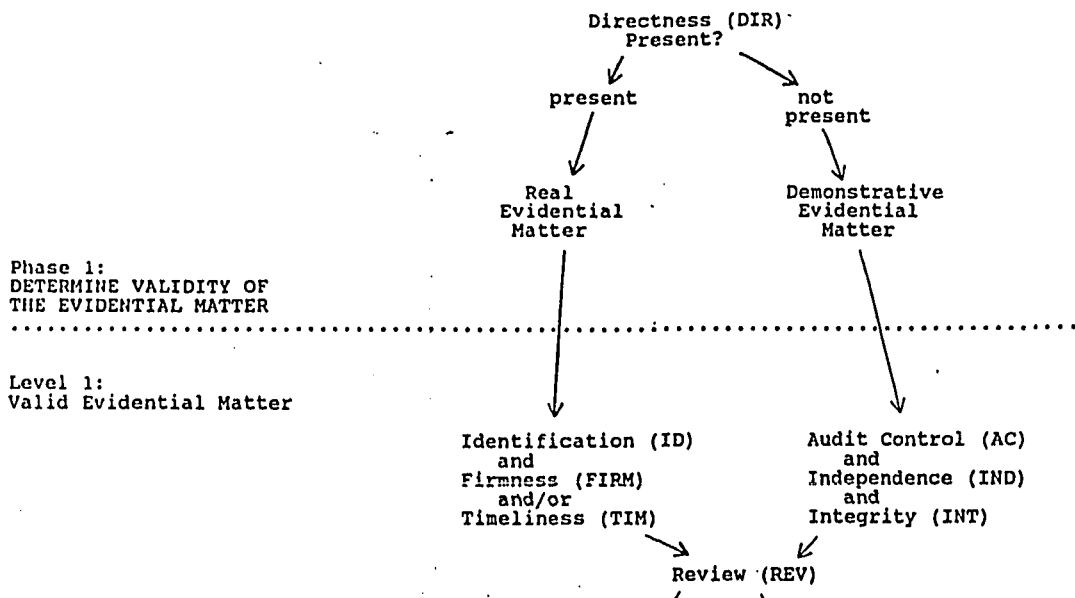
Reject the financial statement assertion

Exhibit 5.5: Phase Two- Determine Validity of the Financial Statement Assertion

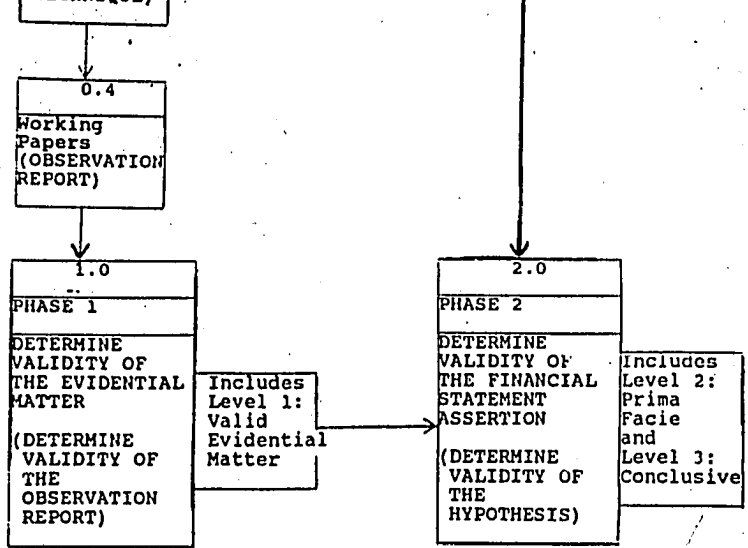
THE MODEL'S INPUTS



THE GENERAL MODEL



PHASES OF MODEL



THE GENERAL MODEL

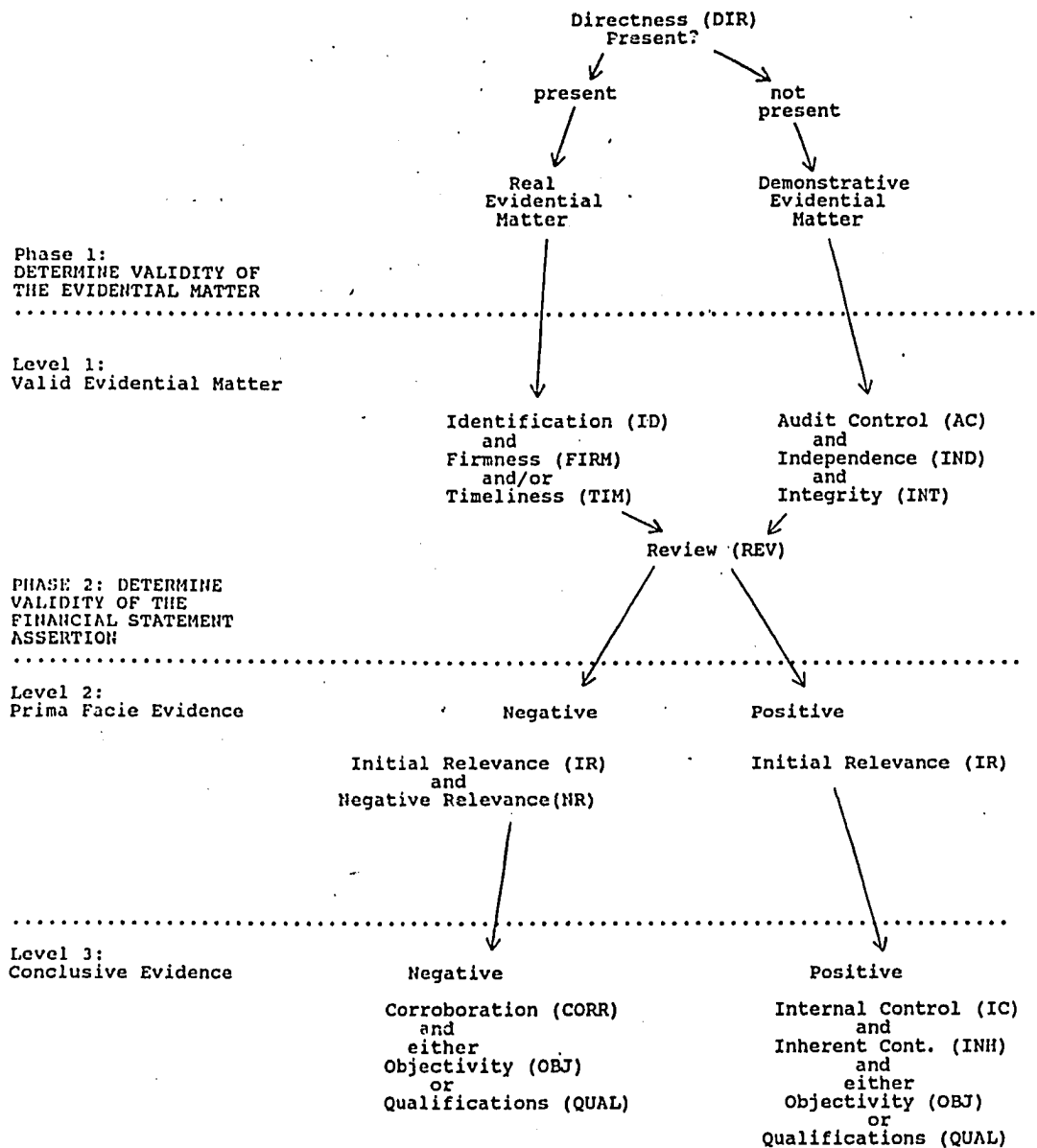
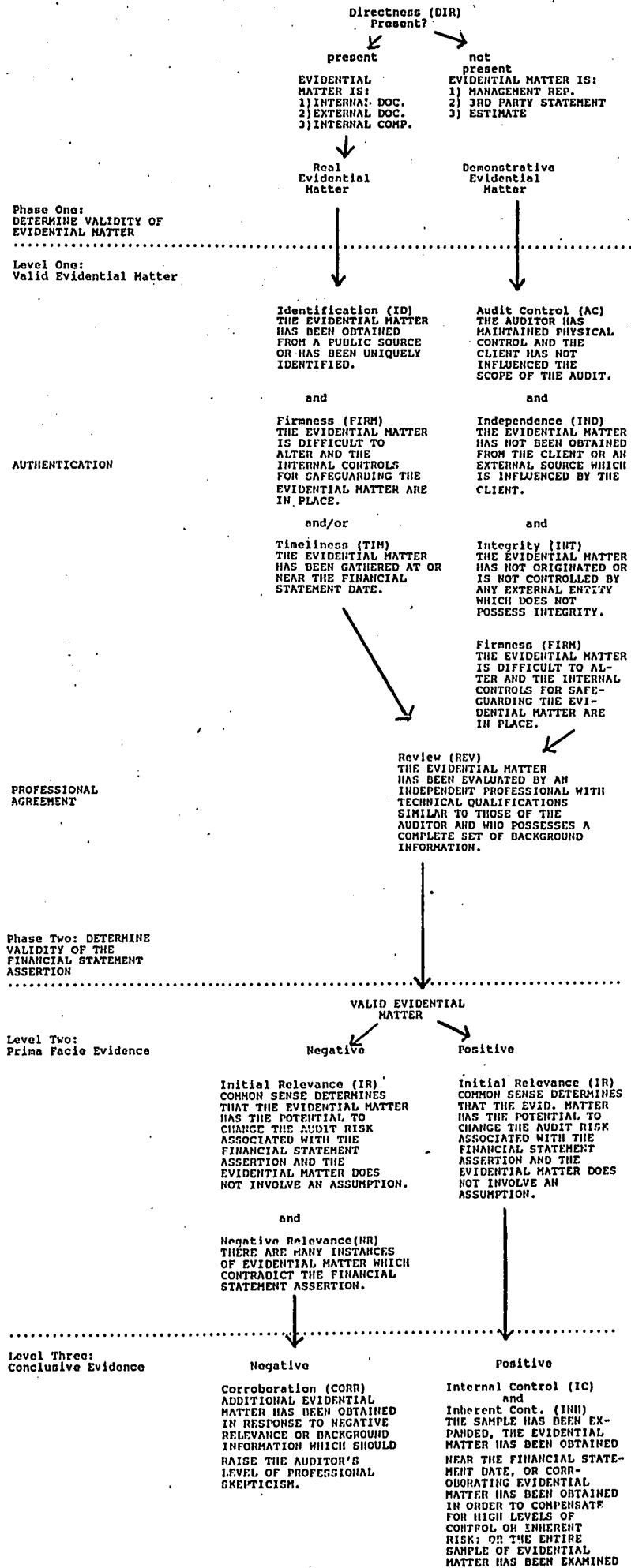


Exhibit 5.6: A Summary of the Model



AUTHENTICATION

Firmness (FIRM)
THE EVIDENTIAL MATTER IS DIFFICULT TO ALTER AND THE INTERNAL CONTROLS FOR SAFEGUARDING THE EVIDENTIAL MATTER ARE IN PLACE.

Independence (IND)
THE EVIDENTIAL MATTER HAS NOT BEEN OBTAINED FROM THE CLIENT OR AN EXTERNAL SOURCE WHICH IS INFLUENCED BY THE CLIENT.

and/or

and

Timeliness (TIM)
THE EVIDENTIAL MATTER HAS BEEN GATHERED AT OR NEAR THE FINANCIAL STATEMENT DATE.

Integrity (INT)
THE EVIDENTIAL MATTER HAS NOT ORIGINATED OR IS NOT CONTROLLED BY ANY EXTERNAL ENTITY WHICH DOES NOT POSSESS INTEGRITY.

Firmness (FIRM)
THE EVIDENTIAL MATTER IS DIFFICULT TO ALTER AND THE INTERNAL CONTROLS FOR SAFEGUARDING THE EVIDENTIAL MATTER ARE IN PLACE.

Review (REV)
THE EVIDENTIAL MATTER HAS BEEN EVALUATED BY AN INDEPENDENT PROFESSIONAL WITH TECHNICAL QUALIFICATIONS SIMILAR TO THOSE OF THE AUDITOR AND WHO POSSESSES A COMPLETE SET OF BACKGROUND INFORMATION.

PROFESSIONAL AGREEMENT

Phase Two: DETERMINE VALIDITY OF THE FINANCIAL STATEMENT ASSERTION

VALID EVIDENTIAL MATTER

Level Two: Prima Facie Evidence

Negative

Positive

Initial Relevance (IR)
COMMON SENSE DETERMINES THAT THE EVIDENTIAL MATTER HAS THE POTENTIAL TO CHANGE THE AUDIT RISK ASSOCIATED WITH THE FINANCIAL STATEMENT ASSERTION AND THE EVIDENTIAL MATTER DOES NOT INVOLVE AN ASSUMPTION.

Initial Relevance (IR)
COMMON SENSE DETERMINES THAT THE EVID. MATTER HAS THE POTENTIAL TO CHANGE THE AUDIT RISK ASSOCIATED WITH THE FINANCIAL STATEMENT ASSERTION AND THE EVIDENTIAL MATTER DOES NOT INVOLVE AN ASSUMPTION.

and

Negative Relevance (NR)
THERE ARE MANY INSTANCES OF EVIDENTIAL MATTER WHICH CONTRADICT THE FINANCIAL STATEMENT ASSERTION.

Level Three: Conclusive Evidence

Negative

Positive

Corroboration (CORR)
ADDITIONAL EVIDENTIAL MATTER HAS BEEN OBTAINED IN RESPONSE TO NEGATIVE RELEVANCE OR BACKGROUND INFORMATION WHICH SHOULD RAISE THE AUDITOR'S LEVEL OF PROFESSIONAL SKEPTICISM.

Internal Control (IC)
and
Inherent Cont. (INH)
THE SAMPLE HAS BEEN EXPANDED, THE EVIDENTIAL MATTER HAS BEEN OBTAINED NEAR THE FINANCIAL STATEMENT DATE, OR CORROBORATING EVIDENTIAL MATTER HAS BEEN OBTAINED IN ORDER TO COMPENSATE FOR HIGH LEVELS OF CONTROL OR INHERENT RISK; OR THE ENTIRE SAMPLE OF EVIDENTIAL MATTER HAS BEEN EXAMINED

and either

Objectivity (OBJ)
THE EVIDENTIAL MATTER DOES NOT ENTAIL A(N)
1) FUTURE ESTIMATE
2) ESTIMATE OF VALUE
3) APPLICATION OF RULES

or

Qualifications (QUAL)
THE INDIVIDUAL EVALUATING THE EVIDENTIAL MATTER IS TECHNICALLY QUALIFIED AND THE AUDITOR HAS UNDERSTOOD THE ASSUMPTIONS UNDERLYING THE EVALUATION.

Exhibit 7.1: Levels One, Two, and Three of Evidence, Revised

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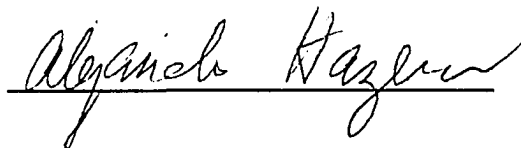
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A handwritten signature in cursive script, reading "Alejandro Hazera", is written over a horizontal line.