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AN INQUIRY INTO SELECTED PROBLEMS OF  
AUDITING COMPUTER-BASED ACCOUNTING SYSTEMS.

The Louisiana State University and  
Agricultural and Mechanical College,  
Ph.D., 1976  
Accounting

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AN INQUIRY INTO SELECTED  
PROBLEMS OF AUDITING COMPUTER-BASED  
ACCOUNTING SYSTEMS

A Dissertation

Submitted to the Graduate Faculty of the  
Louisiana State University and  
Agricultural and Mechanical College  
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in

The Department of Accounting

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## TABLE OF CONTENTS

	Page
ACKNOWLEDGEMENTS . . . . .	ii
LIST OF TABLES . . . . .	vi
ABSTRACT . . . . .	viii
 Chapter	
I. INTRODUCTION . . . . .	1
Purpose of the Inquiry . . . . .	1
Hypotheses . . . . .	3
Research Methodology . . . . .	4
Scope of the Inquiry . . . . .	5
Terminology . . . . .	6
Organization of the Study . . . . .	7
II. THE CONCEPT OF AUDITING STANDARDS AND PROCEDURES . . . . .	10
Development of the Audit Function . . . . .	10
Definition of an Audit Standard . . . . .	14
Definition of an Audit Procedure . . . . .	18
Comparison of Standards and Procedures . . . . .	19
General Standards and the Standards of Field Work . . . . .	21
Summary . . . . .	29
III. THE STUDY AND EVALUATION OF INTERNAL CONTROL . . . . .	33
The Concept of Internal Control . . . . .	33
Definition of Internal Control . . . . .	33
Principles of Sound Internal Control . . . . .	34
The Auditor's Interest in Internal Control . . . . .	37
Computer-Based Systems and Internal Control . . . . .	39
Impact of Computers on Information Systems . . . . .	39
Reaction of Auditors to EDP Systems . . . . .	42
Audit Procedures Available to Study Internal Control . . . . .	44
Selecting Audit Procedures Needed to Study Internal Control . . . . .	55
An Approach to the Selection of Internal Control Procedures . . . . .	56
Preliminary Review . . . . .	56
System Survey . . . . .	57
Application Analysis . . . . .	59
Summary . . . . .	60

Chapter	Page
IV. THE EQUITY FUNDING CASE . . . . .	65
Survey of the Case . . . . .	65
The Parties Affected by the Equity Funding Fraud . . . . .	80
The Accounting Issues . . . . .	86
Responsibility for Detecting Fraud . . . . .	90
Adherence to Audit Standards . . . . .	94
Summary . . . . .	103
V. SURVEY OF SELECTED ASPECTS OF CPA FIRM PRACTICES RELATING TO AUDITS OF COMPUTER-BASED ACCOUNTING SYSTEMS . . . . .	107
Survey Objective . . . . .	107
Survey Description . . . . .	107
Design of the Questionnaire . . . . .	108
Summary . . . . .	126
VI. ANALYSIS OF SURVEY RESPONSES . . . . .	128
Introduction . . . . .	128
Characteristics of Respondents . . . . .	128
Training Methods Utilized . . . . .	133
Policies and Attitudes Regarding Computer-Related Areas . . . . .	135
Involvement With Computer-Based Systems . . . . .	136
Computer Audit Specialists . . . . .	142
Knowledge of Computer-Related Areas . . . . .	144
Study and Evaluation of Internal Control . . . . .	146
Reaction to Equity Funding . . . . .	153
Summary . . . . .	157
VII. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS . . . . .	163
Restatement of Objectives . . . . .	163
Summary and Conclusions . . . . .	164
Recommendations . . . . .	180
A Concluding Comment . . . . .	186
BIBLIOGRAPHY . . . . .	187
APPENDIX A - INTERNAL CONTROL QUESTIONNAIRES . . . . .	197
Questionnaire Covering Entire Processing Function . . . . .	198
Questionnaire Covering Computer System . . . . .	213
APPENDIX B - SURVEY QUESTIONNAIRE . . . . .	223
Cover Letter . . . . .	224
Questionnaire . . . . .	225

Chapter

Page

VITA . . . . . 229

## LIST OF TABLES

Table	Page
1. Size of Geographical Area Served . . . . .	109
2. Amount of Annual Revenue . . . . .	110
3. Size of Professional Audit Staff . . . . .	110
4. Classification of Annual Revenue by Source . . . . .	111
5. Training Methods Utilized . . . . .	113
6. 'The Common Body of Knowledge' Required by Auditors . . . . .	115
7. The Impact of Computers on the Audit Environment . . . . .	116
8. Design of Computer-Based Accounting Systems . . . . .	118
9. Auditing in a Computer-Based Accounting System . . . . .	118
10. Designation of Computer Audit Specialists . . . . .	119
11. Knowledge Required in Selected Computer-Related Areas . . . . .	121
12. Relative Change in Audit Time Devoted to Internal Control . . . . .	122
13. Compliance with Internal Revenue Service Requirements as Part of the Study of Internal Control . . . . .	122
14. Selected Procedures and Techniques Used to Study Internal Control . . . . .	124
15. Reaction to the Equity Funding Case . . . . .	125
16. Comparison of Annual Revenue with Geographical Area Served . . . . .	129
17. Comparison of Annual Revenue with Audit Staff Size . . . . .	131
18. Comparison of Annual Revenue with Percentage of Revenue Derived from Auditing . . . . .	132
19. Comparison of Training Courses with Percentage of Revenue Derived from Auditing . . . . .	134

Table	Page
20. Comparison of Computer Involvement with Geographical Area Served . . . . .	137
21. Responses to 'Common Body of Knowledge' by Firms with Audit Clients Having Computer-Based Accounting Systems . . . . .	139
22. Responses to the Impact of Computers by Firms with Audit Clients Having Computer-Based Accounting Systems . . . . .	140
23. Comparison of Computer Audit Specialist Utilization with Geographical Area Served . . . . .	143
24. Knowledge Required by Firms Receiving More Than 25% of Revenue from Auditing . . . . .	145
25. Comparison of the Study and Evaluation of Internal Control with the Use of Generalized Audit Packages . . . . .	147
26. Comparison of Geographical Area Served with Evaluation of Record Retention in Internal Control Study . . . . .	149
27. Selected Procedures and Techniques Used to Study Internal Control by Local Firms . . . . .	150
28. Selected Procedures and Techniques Used to Study Internal Control by Regional Firms . . . . .	151
29. Selected Procedures and Techniques Used to Study Internal Control by National and International Firms . . . . .	152
30. Reaction to the Equity Funding Case by Local Firms . . . . .	154
31. Reaction to the Equity Funding Case by Regional Firms . . . . .	155
32. Reaction to the Equity Funding Case by National and International Firms . . . . .	156

## ABSTRACT

The objective of any accounting system is to provide information which assists and supports the decision making process. When information is presented in the form of financial statements for the use of decision makers outside of the organization these statements often require an audit opinion based upon the results of the auditor's examination.

The disclosure in 1973 of a massive insurance fraud involving the Equity Funding Corporation of America raised doubts in many areas of the business community as to the fairness of audited financial statements, particularly those prepared in computer-based accounting systems. The Equity Funding fraud was cited as an example of a computer fraud in which the generally accepted auditing standards promulgated by the American Institute of Certified Public Accountants were inadequate when a computer-based accounting system was used.

The research objectives of this study were narrowed from the more general implications of computers in society to specific topics relating auditing standards and procedures to an audit environment involving a computer-based accounting system to process information published in financial statements. The areas for subsequent study were identified as: (1) the definition of auditing standards and procedures; (2) the relationship of auditing standards and procedures to the determination of the audit examination scope; (3) the obsolescence of traditional auditing standards and procedures as applied to computer-based accounting systems;

and (4) current practices of certified public accountants in audit examinations involving computer-based accounting systems.

The research into these areas involved a survey of relevant literature, a review and analysis of the Equity Funding case, a survey of practicing certified public accountants, and analysis of the survey results. Since the Equity Funding fraud was disclosed before an audit report was issued for the latest fiscal period, the inquiry into the definitions of and relationships between auditing standards and procedures was limited to the general standards and standards of field work.

The research indicated that the fraud was largely due to a failure by the auditors to properly adhere to the auditing standards rather than the inadequacy of the standards. The primary failures appeared to be in relation to the independence, technical competence, and due professional care of the auditors. Additional research data gathered from a mailed questionnaire survey of certified public accounting firms also indicated several areas of potential deviation from proper adherence to generally accepted auditing standards.

One conclusion reached after analysis of the research data was that a challenge to the validity of generally accepted auditing standards cannot be supported by the Equity Funding case. The inquiry also concluded that the computer-based accounting system was not an essential element in the perpetration of the Equity Funding fraud, but merely facilitated the processing of fraudulent data. As a result of these conclusions, it was recommended that there be no change in present auditing standards. Instead, the selection and application of proper auditing procedures should receive increased emphasis when a

computer-based accounting system is involved in the audit examination. Another recommendation was advanced for additional study into the possible standardization of certain auditing procedures whenever the examination involves a computer-based system.

Another conclusion of the inquiry was that the present audit environment within the contemporary business community encourages fraud. The commercial capital markets and personal compensation plans of upper level corporate executives tend to encourage the publication of fictitious financial information. Additionally, it was concluded that more rigidly enforced general and field work auditing standards would constitute a deterrent to fraud involving computer-based accounting systems. The inquiry recommended that auditors increase their awareness of management fraud and its effect on the audit examination, as compared to the effect of employee fraud. Increased management controls and auditor controls, in the form of audit committees and required peer review, respectively, were recommended in order to facilitate the establishment of a more open and effective auditor/client relationship.

Hopefully, the results of this research and analysis will support a re-emphasis of the necessity of a proper auditor adherence to the generally accepted auditing standards as the fundamental guidelines of audit performance, and provide a constructive response to the problems of auditing in a computer-based accounting system.



CHAPTER I  
INTRODUCTION

Purpose of the Inquiry

The objective of any accounting system is to provide information which assists and supports the decision making process. As such, accounting is a service function and can be justified only by the usefulness of the information which it provides. One of the primary services of an accounting system is to provide financial information to parties outside of the business organization through the use of the company's financial statements.

The utilization of these statements by investors, creditors, governmental agencies, and other interested parties emphasizes the need for independent attestation of the information presented. This function is provided by certified public accountants acting in the capacity of independent auditors.

The objective of the ordinary examination of financial statements by the independent auditor is the expression of an opinion on the fairness with which they present financial position in conformity with generally accepted accounting principles.<sup>1</sup>

The widespread use of electronic digital computers has stimulated advances in the entire field of information technology. However, these

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<sup>1</sup>American Institute of Certified Public Accountants, Statement on Auditing Standards: Codification of Auditing Standards and Procedures No. 1 (New York: American Institute of Certified Public Accountants, 1973), p. 1.

advances have not been without their problems, particularly for auditors. Computer usage now requires that certified public accountants re-examine their service function. Recent events in the business community reflect a rising number of questions as to the ability of the public accounting profession to adapt to the changing technology of the economic environment.

"One of the most serious problems is that the fields of accounting and law enforcement are not capable of auditing most computer systems."<sup>2</sup> Such complaints are raised not only about fraud and embezzlement, but also concerning the types of negligence and inefficiency often detected by the checks and balances of the more traditional manual accounting system. This alleged incapability of auditors to deal with computer systems affects many aspects of the public accounting profession. In addition to questioning the adequacy of the examination procedures employed, the basic foundations of the audit function embodied in the audit standards are also being questioned.

The purpose of this thesis is to investigate the application of audit standards and procedures to computer-based accounting systems by reference to selected principal issues. The issues selected for the inquiry were chosen on the basis of their relevance to reported fraud involving computer-based systems, and were identified as:

1. The definition of audit standards and procedures.
2. The relationship of audit standards and procedures to determining the scope of the audit examination.

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<sup>2</sup>"Using Computers to Steal - Latest Twist in Crime," U. S. News & World Report, June 18, 1973, p. 42.

3. The obsolescence of traditional audit standards and procedures as applied to computer-based accounting systems.

4. Current practices of certified public accountants in audit examinations involving computer-based accounting systems.

Identification of these major points provided the framework for developing the research hypotheses.

### Hypotheses

Preliminary research into the selected issues indicated certain tentative assumptions upon which the study was based. These include the following:

1. Audit standards represent broad guidelines for the selection of applicable procedures to be used in the audit examination.

2. The development of computer-based accounting systems has not adversely affected the usefulness of audit standards promulgated by the American Institute of Certified Public Accountants.

3. The development of computer-based accounting systems has made it necessary for auditors to incorporate additional examination procedures which specifically apply to the electronic data processing system.

4. At the present time there is no standard body of procedures relating to the audit examination of computer-based accounting systems being utilized by practicing certified public accountants.

After the hypotheses for the study were established from the preliminary research, plans were formulated for the major portion of the research effort.

## Research Methodology

While the application of audit standards and procedures to computer-based systems remained the focal point of this study, the primary research emphasized four specific task objectives. These objectives were designed to test the hypotheses within the stated purpose of the study and, accordingly, included: (1) a search of the literature; (2) a review and analysis of a contemporary, relevant case; (3) a survey of certified public accounting firms regarding selected aspects of independent audit examinations; and (4) an analysis of the evidence with conclusions directed to the purpose of the study.

Phase 1: Literature research. A comprehensive survey was made of the literature in accounting and information processing. This literature included books, journals, newspapers, dissertations, theses and publications of professional associations. The research concentrated on conceptual and practical developments in audit standards, audit procedures and computer technology.

Phase 2: Review and analysis of selected case. A review and analysis was made of the case involving the Equity Funding Corporation of America. This case was selected because of its current relevance to the area of audit examinations involving computer-based accounting systems. The research was largely drawn from The Wall Street Journal and news-oriented publications. The analytical emphasis was on accounting aspects of the case, particularly with respect to audit standards and procedures.

Phase 3: Questionnaire construction and sample selection. An empirical survey was made of training methods, attitudes, and procedures

used by practicing certified public accountants in the area of audits involving computer-based accounting systems. This survey consisted of a questionnaire mailed to a randomly selected sample of 500 public accounting firms and individual practitioners who are members of the American Institute of Certified Public Accountants. The sample elements were chosen from Accounting Firms and Practitioners: 1971.<sup>3</sup> There were 141 completed questionnaires returned, representing a 28.2% response rate. A copy of the questionnaire is included in Appendix B.

Phase 4: Analysis of survey response. The completed questionnaires were analyzed with a series of thirty-two tables containing both numerical and percentage frequency distributions. Tables were prepared for the results of each question surveyed, and comparisons made to analyze possible relationships between selected areas of coverage. The comparative distributions were stratified according to various respondent characteristics in order to provide additional analytical information.

#### Scope of the Inquiry

Several factors limited the research for this inquiry. The more pertinent factors included: (1) auditing financial statements prepared in a computer-based accounting system; (2) the Equity Funding case; and (3) questionnaire construction and analysis.

There are a wide range of possible approaches to problems of auditing financial statements prepared in a computer-based accounting

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<sup>3</sup>American Institute of Certified Public Accountants, Accounting Firms and Practitioners: 1971 (New York: American Institute of Certified Public Accountants, 1972).

system. The research approach taken was to examine the audit standards as the underlying basis of consistent and coordinated audit performance. The scope of inquiry was further limited to the general standards and standards of field work in order to relate the theoretical discussion to descriptive analysis of the Equity Funding case. In this case the disclosure of fraudulent activities halted the issuance of an audit report on the company's financial statements.

Review and analysis of the insurance fraud involving the Equity Funding Corporation of America was limited to information available to the general public through newspapers and periodicals. Attempts to obtain information directly from the parties involved, particularly the public accounting firms, were unsuccessful. Responding parties indicated that pending litigation prevented them from issuing further information.

The questionnaire used in the survey is subject to limitations of construction and application. Possible errors relate to questionnaire construction, respondents' recall, respondents' personal bias, and selection of the sample elements. Therefore, the analysis of responses does not attempt to make definitive or general conclusions which project beyond the results obtained from the survey sample.

### Terminology

The following terminology is used to promote a consistent interpretation of material presented in this inquiry:

1. AUDIT refers to the process of examining financial statements for the purpose of rendering an informed opinion, and this inquiry is

limited to the independent audit function as compared to internal audits performed for management purposes.

2. AUDITOR refers to the independent certified public accountant or member of a certified public accounting firm performing an audit examination.

3. COMPUTER-BASED ACCOUNTING SYSTEM refers to a coordinated unit which collects, manipulates, and distributes financially oriented information with the assistance of an electronic digital computer.

4. CPA refers to a certified public accountant.

5. DATA refers to an uninterpreted and unprocessed statement of fact.

6. DATA PROCESSING refers to the act of collecting, storing, and manipulating facts.

7. EDP refers to electronic data processing.

8. INFORMATION refers to an arrangement of facts, observations, or perceptions that add to knowledge.

9. INSTITUTE refers to the American Institute of Certified Public Accountants.

### Organization of the Study

Chapter II examines the development of the audit function in the United States and the formation of audit standards. The definitions of a standard and procedure are first reviewed and compared to determine their relationship. This comparison is then extended to the audit function and examined in terms of the Institute's general audit standards and standards of field work.

Chapter III surveys the second standard of field work, the study and evaluation of internal control, with respect to the effect of a computer-based accounting system. A coordinated plan for the study and evaluation of internal control is presented for the purpose of determining areas of audit significance in the system. Selected procedures available to the auditor for his internal control evaluation are discussed in terms of their advantages and disadvantages in the audit examination.

Chapter IV investigates a number of aspects of the Equity Funding insurance fraud related to problems of auditing financial statements produced in a computer-based accounting system. Emphasis is given to the degree of auditor's adherence to current standards as a basis for determining their usefulness as guidelines for the selection of adequate audit procedures.

Results of the survey of certified public accounting firms are presented in Chapter V. The questionnaire consists of twenty-six questions covering such areas as: characteristics of respondents, training methods utilized for audit staff, and policies and attitudes regarding computer-related areas. Other areas of coverage are: amount of involvement with computer-based accounting systems, use of computer audit specialists, depth of knowledge required in computer-related areas, study and evaluation of internal control, and reaction to the Equity Funding case.

Further analysis of the data acquired in the survey is presented in Chapter VI. For most questions the data acquired is analyzed according to selected characteristics of the respondents to determine



possible differences in the way certain CPA firms view the problems of auditing computer systems. Respondent characteristics include: the size of geographical area served (international, national, regional, local), size of the professional audit staff, amount of annual revenue earned, and functional derivation of annual revenue (auditing, tax, management services, etc.).

The conclusions and recommendations developed in this inquiry are presented in Chapter VII. Suggestions for future research are included in the recommendations of that chapter.

CHAPTER II  
THE CONCEPT OF AUDITING STANDARDS AND PROCEDURES

Development of the Audit Function

Early attestation activity. The audit function is derived from one of man's most consistent reactions to social interaction in a business environment. Richard Brown notes:

The origin of auditing goes back to times scarcely less remote than that of accounting. . . . Whenever the advance of civilization brought about the necessity of one man being entrusted to some extent with the property of another the advisability of some kind of check upon the fidelity of the former would become apparent.<sup>1</sup>

The primary objective of auditing from ancient times up to the early twentieth century was the detection of fraud and verification of employee honesty.<sup>2</sup> The auditor heard a reading of the accounts by the manager of an absentee landlord for the purpose of attesting to and transmitting a report on the manager's stewardship. This reading verified the honesty of persons charged with fiscal responsibilities on an after-the-fact basis without attempting to prevent fraud before its occurrence.

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<sup>1</sup>Richard Brown, A History of Accounting and Accountants (Edinburgh: T. C. and E. C. Jack, 1905), p. 74.

<sup>2</sup>Michael Chatfield, "English Medieval Bookkeeping: Exchequer and Manor," Contemporary Studies in the Evolution of Accounting Thought, ed. Michael Chatfield (Belmont: Dickenson Publishing Company, Inc., 1968), pp. 30-38.

The Industrial Revolution. The Industrial Revolution had a profound effect on accounting and auditing. One of the principal changes of this period of importance to accounting was an emergence of specialization in economic activity. The move was away from the cottage industries toward regional and national markets. In order to serve these wider markets the productive unit changed from the individual family to factories which employed persons from many different families. As the factory emerged there was a corresponding increase in the specialization of labor.

Social and economic changes brought about by the Industrial Revolution can be broadly summarized into two major categories. First, there was a more intensive use of non-human capital, and second there were changes in the traditional institutional arrangements.<sup>3</sup> The shift from human to non-human capital required a major change in the manner in which funds were obtained to finance production. There was a lag between the time that machines were purchased and workers paid until the time that output was sold and the revenue from the sale was collected.

This production-collection lag and the need for relatively large amounts of capital brought the corporation into prominence. As it became increasingly difficult for an individual to finance his factory's operations other investors were brought in to share in the ownership of the company. The formation of new groups of capitalists and workers

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<sup>3</sup>Sidney Pollard, "Capital Accounting in the Industrial Revolution," Contemporary Studies, pp. 113-134.

has been the subject of research by historians and economists for many years because of the tremendous stresses placed on the English social structure. However, this separation of owners from the means of production also had a great effect on the development of financial reporting and auditing.

Auditing under the British Companies Acts. Since financial statements were used to raise capital for operations as well as to report operations, there was a tendency for the management to structure financial reports in the manner most favorable to them. Reporting abuses were common, and the investing public could not attach a high degree of credibility to published financial statements. This lack of credibility and the rising number of fraudulent business ventures created the need for a series of very important laws known as the British Companies Acts. The Acts, enacted between 1844 and 1947, provided statutory rules and requirements designed to limit specific abuses of accounting for and reporting on corporate enterprises.<sup>4</sup> The principal function of an audit under the Companies Acts was the detection of fraud, and the resulting examination involved a detailed transactions check of all work performed by company employees.

Public accounting in the United States. The development of the accounting profession in the United States was derived from, but did not directly parallel, that of Great Britain. The American frontier, with its rapidly expanding social and economic structure, necessitated a business environment which was more flexible and adaptable than its

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<sup>4</sup>H. C. Edey, "Company Accounting in the Nineteenth and Twentieth Centuries," Contemporary Studies, pp. 135-143.

British counterpart. This flexibility included the accounting and auditing methods employed, and helped mold a set of acceptable practices and procedures.

Income tax legislation. Two events of the twentieth century had a profound effect on shaping the development of the audit function in the United States. The first was the enactment of federal income tax laws, and the second was the Great Depression of the 1930's. The Corporation Excise Tax of 1909, later replaced by the Income Tax Law of 1913, did not require audited financial statements, but it did create opportunities for public accountants to set up accounting systems and prepare tax returns. The important effect was the creation of a client and CPA relationship that had previously been non-existent.

The Securities Acts. The most significant impact on the public accounting profession in general, and the audit function in particular, came from the economic disasters of the Great Depression and the resulting federal legislation. Statutory regulation similar to the British Companies Acts was enacted in the form of the Securities Act of 1933 and the Securities Exchange Act of 1934. Both laws required that audited financial statements of corporations whose securities were traded in interstate commerce be submitted to the Securities and Exchange Commission, a federal regulatory agency. The Securities Act of 1933 covered the initial registration of new securities and the Securities Exchange Act of 1934 required annual reports of corporations whose securities were traded on a securities exchange.

The need for standards. The public accounting profession has probably contributed more, in the audit function, to economic morality

in our times than any other single group.<sup>5</sup> However, as valuable as the audit function may be, there still remain substantial problems to overcome. These problems arise from the internal pressures of an expanding profession and the external pressures of a rapidly changing economic environment. Such problems require a regulatory structure based upon a systematic arrangement of standards of quality and performance.

An adequate set of audit standards enhances the development of a comprehensive and consistent set of procedures to be followed. These procedures are applied by the CPA in order to meet the objectives of an independent audit of the organization's financial statements. The complementary relationship between standards and procedures is examined in the remainder of this chapter.

#### Definition of an Audit Standard

General definition. Most dictionaries give essentially the same definition to standard:

. . .n.1. an object considered by an authority or by general consent as a basis for comparison; an approved model. 2. anything, as a rule or principle, that is used as a basis for judgment. . . . 3. an average or normal requirement, quality, quantity, level, grade, etc. . . . 4. standards; those morals, ethics, habits, etc., established by authority, custom, or an individual as acceptable. . . .<sup>6</sup>

This definition includes several elements that are essential to the concept of a standard. A standard can be concrete or abstract. As a

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<sup>5</sup>John L. Carey, The CPA Plans for the Future (New York: American Institute of Certified Public Accountants, 1965), pp. 376-377.

<sup>6</sup>Jess Stein and Laurence Urdang (eds.), The Random House Dictionary of the English Language (New York: Random House, 1966), p. 1385.

concrete model it serves as a definite basis for comparison. Either the object being compared to the standard achieves characteristics equal to the standard or it does not. As a more abstract concept, such as a rule or principle, the standard serves as a basis for judgment. A basis for comparison implies a more objective situation in which a final decision can be made. A basis for judgment implies a subjective concept in which the decision reached depends upon the state of mind, experience, circumstances, and training of the person attempting to make the decision.

Standard as a basis for judgment. At this point it should be stressed that the phrase "a basis for judgment" does not mean that only one possible decision can be reached. Whereas machines can be involved in a process of comparison, only humans can be involved in a process of judgment. Therefore, judgment represents a more dynamic and flexible state of nature than comparison. Seemingly identical situations may require variant decisions because of the different circumstances surrounding each situation.

Standards established by custom. One element in the definition of a standard is that it must be accepted by general consent or by an authority, but not necessarily by both. The establishment of a standard by custom or general consent requires a much longer evolutionary period of practical experience and usage before a norm is inductively developed for others to follow. Standards based on norms of behavior tend to be more flexible and to change as the environment upon which they are based changes. Such standards also tend to be less distinct and to create situations where conflicting circumstances may not clearly delineate the

norm that is to be followed. If there is no formal process for arbitrating these conflicts, the turmoil that arises may resist a satisfactory resolution.

Standards established by authority. A standard established by an elected or appointed authority requires a shorter time interval for its initial establishment. Either inductive or deductive reasoning may be used in creating an authoritative standard. However, while such a standard may not be universally accepted by those to whom it applies, an authoritative standard may be more effective for decision making because of an increased clarity of requirements. Standards, once they are established, tend to be more rigid and lack responsiveness to changes in the environment upon which they are based.

An achievable objective. An effective standard will usually represent an average or normal requirement achievable in the ordinary course of events. As a general rule it should not be an idealistic goal toward which one aspires but can never reach. This element of the definition, the average requirement, means that the standard must have enough flexibility to reflect circumstances and events which may change over time.

Standard compared to criterion. Another facet of the definition of a standard is the list of synonyms of a standard, and an explanation of the relationship between a standard and a criterion.

. . . gauge, basis, pattern, guide. Standard, criterion refer to the basis for making a judgment. A standard is an authoritative principle or rule that usually implies a model or pattern for guidance, by comparison with which the quantity, excellence, correctness, etc., of other things may be determined. . . . A criterion is a rule or principle used to judge the value, suitability,



probability, etc., of something, without necessarily implying any comparison. . . .<sup>7</sup>

Both standard and criterion refer to the basis for making a judgment in terms of a guide or gauge. However, criterion is a narrower concept than standard. To be effective a standard must contain some model or pattern for guidance with which a comparison can be made. It is this model or pattern which the criterion furnishes. Such a model exists independently but is subject to change. The viewpoint in which the criterion provides the benchmark of comparison, and may be changed independently of the standard, differs slightly from Eric Kohler's interpretation in A Dictionary for Accountants. Kohler's definition of a standard states that it "provides a criterion for . . . future activity . . . at the level at which enforcement can be best applied."<sup>8</sup> The question to be answered is whether it is the standard which provides the criterion for comparison or whether the criterion can be independently determined. In the latter case the criterion can be changed without changing or negating the original standard. If the viewpoint is taken that the standard determines the criterion, the statement "to keep pace with a changing world, old standards must often give way to new" becomes crucial.<sup>9</sup> Any change in environmental conditions can necessitate a change in the basic standard.

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<sup>7</sup>Stein and Urdang (eds.), Random House Dictionary, p. 1385.

<sup>8</sup>Eric L. Kohler, A Dictionary for Accountants (4th ed.; Inglewood Cliffs: Prentice-Hall, Inc., 1970), p. 400.

<sup>9</sup>Kohler, p. 400.

A standard as a basic guideline for auditing. From a broad viewpoint, standards represent basic guidelines. These guidelines are subject to changing performance criteria and varying interpretations, but these changes do not invalidate the original standard as a basis for judgment. An audit standard's ". . . purpose is to serve as a working basis for the institution of procedures that will assure conformity on the part of . . ." auditors in reaching their audit objectives.<sup>10</sup> In order to maintain this working basis the standard must be flexible enough to preserve its validity in response to the changing conditions of auditing practice.

#### Definition of an Audit Procedure

General definition. A general definition of procedure is:

. . . n.1. act or manner of proceeding in any action or process; conduct. 2. a particular course or mode of action. 3. mode of conducting legal, parliamentary, or other business . . . a series of progressive and interdependent steps by which an end is attained . . .<sup>11</sup>

From this definition a procedure apparently entails a specific objective. This objective is achieved within the guidelines supplied by the auditing standard. As the criteria of the standard change, the course of action must change. Therefore, it is the procedures which must adapt to the standard to meet these changing criteria. The individual objectives of a series of audit procedures can be systematically combined to satisfy the overall objectives of an audit standard. The selection

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<sup>10</sup>Kohler, p. 400.

<sup>11</sup>Stein and Urdang (eds.), Random House Dictionary, pp. 1146-1147.

process, however, relies on the auditor's training, experience, and judgment in determining which procedures are to be performed.

#### Comparison of Standards and Procedures

Recognizing the need for standards. There was no distinction made between auditing standards and auditing procedures during their early stages of development in the United States.<sup>12</sup> In contrast to the British development of acceptable accounting practices and standards through legislation and litigation, initial American efforts to develop uniform standards and procedures started within the accounting profession as a response to outside pressure. The American Institute of Accountants (later renamed the American Institute of Certified Public Accountants) recognized "the need for authoritative audit guidelines in order to maintain a standard of performance that would strengthen public confidence."<sup>13</sup> However, the need for standardized accounting practices or governmental regulation was not a settled issue.

The first attempt at standards. At the request of the Federal Trade Commission, meetings between the Institute and various federal agencies resulted in the publication of ". . . a memorandum on balance sheet audits . . ." in the Federal Reserve Bulletin of 1917.<sup>14</sup> This bulletin dealt mainly with recommended audit procedures, but it also included suggested forms for a profit and loss statement and a balance

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<sup>12</sup>Lawrence Todd Johnson, "The Auditor's Responsibility for the Detection of Management Fraud: Selected Cases" (unpublished Doctor's dissertation, University of Michigan, 1972), p. 91.

<sup>13</sup>Carey, The CPA Plans for the Future, p. 134.

<sup>14</sup>Johnson, "The Auditor's Responsibility," p. 9.

sheet. When the Federal Reserve Board reissued the article in pamphlet form, the title was changed to "Approved Methods for the Preparation of Balance Sheet Statements" in recognition of the true nature of the material contained. There were two important effects of the Federal Reserve Board pamphlet. First, it had an immediate and lasting effect on the auditing standards and procedures used by certified public accountants.<sup>15</sup> Second, the deeper and more lasting significance was that an organization, through its own membership, took a first step toward the self-regulation necessary for any profession which practices in the public domain.

Separating standards and procedures. In 1947 the Institute published A Tentative Statement on Auditing Standards--Their Generally Accepted Significance and Scope. The approach taken in the formulation of these standards was largely inductive, and was based on the experiences and traditional practices of the public accounting profession. This first attempt to separate standards from procedures, and to define their relationship, was explained as follows:

Auditing standards differ from auditing procedures in that procedures relate to acts to be performed, whereas standards deal with measures of the quality of the performance of those acts and the objectives to be attained by the use of the procedures undertaken. Auditing standards as distinct from auditing procedures concern themselves not only with the auditor's professional qualities but also with the judgment exercised by him in the performance of his examination and in his report.<sup>16</sup>

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<sup>15</sup>Carey, The CPA Plans for the Future, p. 134.

<sup>16</sup>American Institute of Accountants, A Tentative Statement of Auditing Standards--Their Generally Accepted Significance and Scope (New York: American Institute of Accountants, 1947), p. 9.

Standards divided according to objectives. In its 1947 statement the Institute divided standards into three areas: general standards, standards of field work, and standards of reporting. There were originally nine standards, three in each area, with a tenth subsequently added to the standards of reporting. The Institute's Committee on Auditing Procedure observed that the standards guide the auditor's judgment, even though individual situations could require variations in the extent and suitability of recommended procedures.<sup>17</sup> No substitute for individual judgment by the auditor was identified and certain situations were recognized as requiring the performance of additional procedures beyond those recommended under ordinary circumstances. The auditing standards were recognized as being interrelated, and the facts which determined adherence to any standard were regarded as equally relevant to others.<sup>18</sup>

#### General Standards and the Standards of Field Work

Focus of this study. Since this study focuses on problems encountered in examinations of financial statements prepared in a computer-based accounting system, with particular reference to the Equity Funding case, further discussion of the auditing standards promulgated by the Institute is limited to the general standards and the standards of field work.

General standards. The general standards are unique, in comparison with the standards of field work or reporting, because they are

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<sup>17</sup>American Institute of Certified Public Accountants, Statement on Auditing Standards: Codification of Auditing Standards and Procedures No. 1 (New York: American Institute of Certified Public Accountants, 1973), p. 7.

<sup>18</sup>AICPA, Statement on Auditing Standards, p. 7.

personal in nature. The general standards deal with the auditor's qualifications and the quality of work performance. These personal standards form the basis for all aspects of the audit including field work and reporting on the results of the audit examination.<sup>19</sup>

Adequate technical training. The first general standard states that "the examination is to be performed by a person or persons having adequate technical training and proficiency as an auditor."<sup>20</sup> The Institute's Committee on Auditing Procedures has recognized that ". . . the independent auditor's formal education and professional experience complement one another . . . ." <sup>21</sup> The Committee further recommended that the years of prior formal education include the basic training needed for various situations encountered by new staff personnel upon entering the practice of auditing. Since a substantial number of accounting graduates are not employed in public accounting, the educational curriculum does not focus on all situations unique to audit work. Therefore, adequate technical training cannot end with academic preparation. The Committee on Auditing Procedure, in agreement with other authoritative sources, recognized that both practical experience and continuing formal education were necessary. A fixed level of competence must be maintained and increased to the level necessary for the exercise of seasoned judgment. Adequacy of training and proficiency represented conditions of sufficiency within the collective state of mind of an entire profession.

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<sup>19</sup>AICPA, Statement on Auditing Standards, p. 7.

<sup>20</sup>AICPA, Statement on Auditing Standards, p. 7.

<sup>21</sup>AICPA, Statement on Auditing Standards, p. 8.

Independence in mental attitude. The second general standard states that "in all matters relating to the assignment, an independence in mental attitude is to be maintained by the auditor or auditors."<sup>22</sup> The key phrase of this standard relates to the maintenance of independence in mental attitude. A strict, literal interpretation could concentrate on independence in fact and ignore other facets of the concept of independence. Independent auditors, for example, are counselled to avoid situations that would damage credibility with outside observers. Independence relies to a great extent upon intellectual honesty and self-regulation by the auditor. "To be independent, the auditor must be intellectually honest; to be recognized as independent, he must be free from any obligation to or interest in the client, its management, or its owners."<sup>23</sup>

Due professional care. The third general standard states that "due professional care is to be exercised in the performance of the examination and the preparation of the report."<sup>24</sup> This standard leads directly into both the standards of field work and reporting. The third general standard is interpreted as requiring the auditor to undertake the responsibility for observing other applicable standards, and performing his work with the good faith, integrity and level of competence commonly possessed by others in that profession. It is important to recognize that the auditor does not contract or represent himself as

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<sup>22</sup>AICPA, Statement on Auditing Standards, p. 8.

<sup>23</sup>AICPA, Statement on Auditing Standards, p. 9.

<sup>24</sup>AICPA, Statement on Auditing Standards, p. 10.

being infallible. Negligence, bad faith, and dishonesty violate due professional care, but pure errors of judgment do not.<sup>25</sup>

Standards of field work. As previously mentioned, the general standards are applicable to all phases of auditing while the standards of field work are more specific as to the nature of the audit work to be performed. In all of the standards of field work the concepts of materiality and relative risk are important elements of the auditor's examination. In the final analysis, the auditor's subjective judgment determines the ultimate consideration given to these concepts. Materiality and relative risk are fundamentals in the auditor's desire to perform all work necessary to adequately support an opinion while continuing to maximize the utility of audit time.

Adequate planning and supervision. The first standard of field work states that "the work is to be adequately planned and assistants, if any, are to be properly supervised."<sup>26</sup> The adequacy of planning and supervision are relative to the audit and audit personnel involved. The auditor in charge of the examination must have enough training and experience to temper and guide his decision process. If this preparation was not sufficient the firm or partner in charge of the audit must correct any deficiencies. For the individual practitioner this process is more difficult because he operates without the benefit of peer review. The Committee on Auditing Procedure considers the early appointment of the auditor and timing of audit work performed throughout the

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<sup>25</sup>AICPA, Statement on Auditing Standards, p. 10.

<sup>26</sup>AICPA, Statement on Auditing Standards, p. 11.



year to be very important points in assessing the adequacy of audit planning and supervision.<sup>27</sup>

Study and evaluation of internal control. The second standard of field work is highly significant to the subsequent discussion of auditing statements prepared in computer-based accounting systems. "There is to be a proper study and evaluation of the existing internal control as a basis for reliance thereon and for the determination of the resultant extent of the tests to which auditing procedures are to be restricted."<sup>28</sup> It is important for the auditor to distinguish clearly between the study of internal control and the evaluation of internal control, and the relationship of internal control to the audit examination. The timing of this phase of the audit is important because its purpose is to establish an informed basis for determining the nature and extent of further procedures to be employed. Certain results of this work often are provided to clients to improve their information and data processing systems. The purpose of the auditor's study and evaluation of internal control, as related to the examination of financial statements and an opinion on these statements, is not changed by the type of data processing and accounting systems in use. Even though the purpose of the auditor's study and evaluation of internal control has not changed, the definition and scope must be interpreted and applied after consideration is given to the peculiarities of EDP systems.

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<sup>27</sup>AICPA, Statement on Auditing Standards, pp. 11-13.

<sup>28</sup>AICPA, Statement on Auditing Standards, p. 13.

Internal control defined. The original definition as expressed in 1949 stated that

. . . internal control comprises the plan of organization and all of the coordinate methods and measures adopted within a business to safeguard its assets, check the accuracy and reliability of its accounting data, promote operational efficiency, and encourage adherence to prescribed managerial policies. . . .<sup>29</sup>

Accounting controls. Statement on Auditing Procedure No. 29, issued in 1958, divided internal control into accounting controls and administrative controls. Accounting controls include the safeguarding of assets and the reliability of the financial records, both of which the auditor is responsible for in the study and evaluation of internal control. Further interpretation extends the accounting controls to include proper managerial authorization for the execution of transactions and access to the assets. These items were added because of the effect on the safeguarding of assets and reliability of financial records.

Administrative controls. Administrative controls relate to the efficient management of the organization and includes the plan of operation and the procedures concerned with the managerial decision process. This decision process leads to management's authorization of transactions. Such authorization ". . . is a management function directly associated with the responsibility for achieving the objectives of the organization and is the starting point for establishing accounting control of transactions."<sup>30</sup> Administrative controls are not within the scope of the auditor's study and evaluation of internal control and any

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<sup>29</sup>AICPA, Statement on Auditing Standards, p. 15.

<sup>30</sup>AICPA, Statement on Auditing Standards, p. 20.

work done in this area would be classified as management services. Determination of audit procedures would not include management service oriented objectives.

Identifying internal control weaknesses. The study of the system of internal control requires the auditor to be thoroughly familiar with the procedures and controls prescribed by the system and to gain assurance that these controls are operating as planned. After the necessary review of the system and tests of compliance are finished, evaluation of the system is accomplished in terms of each significant class of transactions and its related assets. This evaluation considers the types of errors that could occur, the accounting controls that should prevent or detect such errors, whether these controls are being utilized by the client, and any weaknesses in the system. "Controls and weaknesses affecting different classes of transactions are not offsetting in their effect . . .", and therefore the auditor cannot rely exclusively on an overall evaluation of internal control in determining audit procedures.<sup>31</sup> He must specifically identify and evaluate individual weaknesses in terms of their potential effect on the financial statements. The overall evaluation is an important part of the initial review process which familiarizes the auditor with the organization and the accounting system before he begins his detailed examination.

Sufficient evidential matter. The third standard of field work states that "sufficient competent evidential matter is to be obtained through inspection, observation, inquiries, and confirmations to afford

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<sup>31</sup>AICPA, Statement on Auditing Standards, p. 32.

a reasonable basis for an opinion regarding the financial statements under examination."<sup>32</sup> This standard points out the unique nature of audit work done by independent certified public accountants compared to the popular and legal definitions of evidence. Legal evidence is determined and controlled by rules developed over many centuries of jurisprudence, whereas the validity of audit evidence in terms of nature, competence, and sufficiency does not have this rigid set of constraints. The judgment of the auditor within the particular circumstances of the audit retains its importance.

The nature of evidential matter includes the original accounting data of the company and the additional analysis of corroborating evidence which the auditor independently gathers to support his conclusions. The mere clerical accuracy of accounting data cannot be accepted as evidence upon which to base an audit opinion. Such opinion is based, instead, upon a systematic pattern of logical reasoning which goes much deeper than the data obtained from client records.

The competence of evidential matter greatly depends upon the source of that evidence. A source completely beyond the control of the client allows the auditor to place greater reliance on the independence and objectivity of its preparation, but not necessarily more reliance on its validity or relevancy. All of these elements are important to the competence of evidence and the presence of one or more does not diminish the need for the others. The auditor must also weigh the additional evidence against the cost of obtaining such evidence. He must sometimes

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<sup>32</sup>AICPA, Statement on Auditing Standards, p. 55.

rely on a reasonable basis for making his opinion, instead of the absolute certainty that he would rather have.

### Summary

The audit function has become increasingly important as a part of the economic environment throughout most industrialized societies. As the owners of a company were separated from the workers and managers the need for an independent attestation of claimed performance was created. This was particularly true with the rise of the corporate form of business organization and its requirement for stewardship reporting to the owners.

Numerous business failures in the United States during the 1930's resulted in federal regulatory legislation similar to the British Companies Acts, including the Securities Act of 1933 and the Securities Exchange Act of 1934. In conjunction with this legislation was the creation of the Securities and Exchange Commission to oversee compliance by the business and public accounting firms affected. The desire for self-regulation within the public accounting profession asserted itself early in the developmental stages through attempts to establish standards of acceptable audit performance.

Any form of standard includes several basic concepts which also apply to auditing standards. As a concrete model a standard serves as a definite basis for comparison, while on an abstract level it serves as a basis for making judgments. A standard may be accepted by general consent, developed through an evolutionary period, or established by a recognized authority. In each case a capacity to adapt to changing conditions must be retained within the standard. A standard also

represents an average requirement achievable in the ordinary course of events. Unachievable ideals negate the effectiveness of a standard in serving as a guideline for reaching a decision.

Audit standards also embrace these basic elements of a general definition of a standard. The purpose of audit standards is to serve as basic guidelines for human judgment so as to achieve certain desired objectives during the course of an audit. These standards must be broad enough to include the flexibility needed to prevent a continuous problem of obsolescence caused by rapid environmental change, yet precise enough to provide useful guidance.

The flexibility of auditing standards can be maintained through the judicious use of applicable audit procedures. Since any procedure, auditing included, entails a specific course of action to be undertaken in order to attain a specific objective, this course of action can be changed whenever conditions necessitate such a change. Therefore, audit procedures are intended to be adapted according to the direction provided by auditing standards. Only when the entire social and economic structure of business activity is so fundamentally changed as to make existing standards ineffective would it be necessary to revise them. This revision should not be necessary under normal minor changes through which a dynamic society continually progresses.

The American Institute of Certified Public Accountants is generally recognized as the primary authority for practicing certified public accountants and their standards are divided into general standards, standards of field work, and standards of reporting. This study is limited to a discussion of the general standards and standards of field

work as related to the auditor's examination of financial statements prepared in a computer-based accounting system. The general standards and standards of field work as promulgated by the Institute include:

General Standards

1. The examination is to be performed by a person or persons having adequate technical training and proficiency as an auditor.
2. In all matters relating to the assignment, an independence in mental attitude is to be maintained by the auditor or auditors.
3. Due professional care is to be exercised in the performance of the examination and the preparation of the report.

Standards of Field Work

1. The work is to be adequately planned and assistants, if any, are to be properly supervised.
2. There is to be a proper study and evaluation of the existing internal control as a basis for reliance thereon and for the determination of the resultant extent of the tests to which auditing procedures are to be restricted.
3. Sufficient competent evidential matter is to be obtained through inspection, observation, inquiries, and confirmations to afford a reasonable basis for an opinion regarding the financial statements under examination.

The general standards are concerned with the personal qualifications of the auditor and the quality of his work, important factors for the standards of field work and reporting. The standards of field work refer to the nature of the work performed during the audit examination as a basis for establishing and supporting an opinion as to the fairness

of the financial statements prepared by the client. The auditor can be independent and competent--but not infallible. His work should reflect the level of sophistication generally achieved by others within the same profession.

The second standard of field work, involving the study and evaluation of internal control, was presented in this chapter in terms of the general implications for an audit engagement. Chapter III investigates internal control in more detail, with an emphasis on the impact of computer-based accounting systems in selecting the procedures applicable to the audit examination.

Changes in the nature of the accounting system due to EDP facilities are related to corresponding changes in the focus of the auditor's study and evaluation of internal control. A flexible approach designed to enable the auditor to systematically analyze internal control and concentrate on areas of audit significance is presented with a discussion of specific procedures useful in this analytical process.



## CHAPTER III

### THE STUDY AND EVALUATION OF INTERNAL CONTROL

The independent auditor of financial statements evaluates accounting and other information systems in the course of an audit. In most cases this system review determines the degree to which the auditor relies on the output of the system in arriving at conclusions relative to the validity of financial presentations. In addition to the practical necessity of reviewing information systems for reliability, the American Institute of Certified Public Accountants has established the evaluation of internal control within an entity under audit as a requirement for independent auditors. More specifically, this requirement is designated among the auditing standards so established as the second standard of field work. In this chapter the concept of internal control will be related to audit field work standards. As a further extension of the internal control concept, the relationship of internal control to computer-based information systems will be reviewed. The audit application of internal control concepts to computer-based systems provides background for the case study in Chapter IV and supports the survey described in Chapter V.

#### The Concept of Internal Control

##### Definition of Internal Control

In this section the concept of internal control will be associated

primarily with the independent auditor's responsibility for compliance with the field work standards. Accordingly, internal control will be defined as presented in the American Institute of Certified Public Accountants publication, Statement on Auditing Standards Number 1.

Internal control comprises the plan of organization and all of the coordinate methods and measures adopted within a business to safeguard its assets, check the accuracy and reliability of its accounting data, promote operational efficiency, and encourage adherence to prescribed managerial policies.<sup>1</sup>

### Principles of Sound Internal Control

Promotes system effectiveness. Sound internal control is essential if a system is to function properly. "Control is pre-eminent condition to data processing effectiveness. A properly controlled system will operate effectively with less optimal system design and equipment. The converse is not true."<sup>2</sup> Systems that do not include an adequate plan of controls will usually not function effectively, even though they may appear to function efficiently. On the other hand systems that have lower quality design, equipment, and personnel tend to be more effective in attaining overall organizational objectives if they have a good system of internal control. However, the lower quality system may be less efficient than a system with better design, equipment, and personnel. The important element in any system is the basic coordination provided by a well planned system of internal control. Such a system

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<sup>1</sup>American Institute of Certified Public Accountants, Statement on Auditing Standards: Codification of Auditing Standards and Procedures No. 1 (New York: American Institute of Certified Public Accountants, 1973), p. 15. This definition was presented in Chapter II and is re-stated at this point for purposes of continuity.

<sup>2</sup>Felix Kaufman, "EDP Control Problems," The Controller, July, 1962, p. 367.

enables one to evaluate the accounting information provided for both internal and external users.

Decisions of all types are based upon the information provided by the accounting system, and this information must be as reliable as possible in order for the decision to be sound. Proper internal control provides some assurance that the information used to make the decisions will be dependable. Internal control also assures compliance with company policies, and the maintenance of accounting records which can be used to produce reliable financial statements. Both of these factors are an important part of the Institute's interpretation of internal control. The independent certified public accountant must also be concerned with the presence of internal controls. The study and evaluation of the system of internal control of an audit client is a required first step in the audit process. The remainder of the audit examination must be planned on the basis of the results of this evaluation.

Separation of duties. The principal elements of an internal control system should be the same whether the company being audited is utilizing a manual or computer system to process the accounting data. Internal control management should begin with a plan of organization which provides for the appropriate segregation of functional responsibilities. This is the well-tested principle of separation of duties and is probably the most elementary requirement for the system because it divides the responsibilities over assets to be controlled in such a manner that no single person has complete control over both the custodial and the record keeping functions of a transaction. This logical

plan of organization should be clearly defined in written statements of company policy and procedures.

Proper authorization and supervision. A system of internal control should also provide for authorization by supervisory personnel and other accounting procedures adequate to provide accounting control over assets, liabilities, revenues, and expenses. This objective may be achieved through the use of a chart of accounts and a budgetary report program which permits management to effectively determine where each item is located, and who is responsible for each item.

Compliance with established policy. Sound accounting and managerial practices should be followed in the performance of duties by each department. Proper internal controls should provide for periodic checks to see that actual practices conform with prescribed procedures. The increased emphasis that many companies are placing on the internal audit staff reflects the importance of this periodic review and interpretation of the practices being followed. Even though the client has established an internal audit department for that purpose, the independent auditor is not relieved of the responsibility to assess the functioning of the procedures and controls.

Competent personnel. A sound system of internal control requires that the company employ personnel with the knowledge, skills, and personal attributes necessary to meet job requirements and responsibilities. In the absence of such personnel even the highest quality internal control system cannot be expected to function effectively. In some cases, however, highly competent employees can overcome deficien-

cies in a system and provide the auditor with useful information for the audit examination.

### The Auditor's Interest in Internal Control

Steps in the evaluation process. The auditor's study and evaluation involves three basic steps:

1. Examining the system to insure that controls stated by the client actually exist.
2. Testing the system to determine whether or not these controls are operating properly.
3. Evaluating the strengths and weaknesses of the system as a basis for determining additional audit procedures to be performed.

One aspect of internal control is the prevention and detection of individual errors in the data processing operation. "In considering specific types of accounting transactions, the experienced auditor should be able to identify the various kinds of errors and irregularities that could result in unreliable financial records or improper disposition of assets."<sup>3</sup> The cumulative effects of such errors allow the auditor to distinguish between critical and non-critical weaknesses in the internal control system. Critical weaknesses would cause the auditor to adjust the audit procedures or change the timing of the performance of these procedures. The distinction between critical and non-critical weaknesses lies in the impact on the audit. There may be cases when the lack of certain processing controls will not affect the audit even though this deficiency may cause certain inefficiencies in

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<sup>3</sup>Gordon Davis, Auditing & EDP (New York: American Institute of Certified Public Accountants, 1968), p. 105.

the data processing operation. Although these administrative controls are not the auditor's primary concern and may cause no change in the audit program, they are an appropriate area for constructive comments to the client in the auditor's management letter.

Errors and irregularities which could affect the financial statements are of special concern to the auditor. "Each error or irregularity possibility for which appropriate accounting controls are not in use constitutes a weakness requiring the auditor's attention."<sup>4</sup> Weaknesses in accounting controls, as opposed to weaknesses in administrative controls, require adjustments in audit procedures where appropriate.

Characteristics of acceptable internal control. An internal control system ordinarily must have certain minimum characteristics before it is acceptable to the auditor:<sup>5</sup>

1. The system must yield output which is easily traceable to original source documents.

2. The system must provide a well-defined trail from source documents to output. In other words, there must be a two-way audit trail which can be followed from transactions to output or from output to transactions.

3. The system must have clearly defined internal checks. These characteristics are generally present and evident in a well-constructed

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<sup>4</sup>Davis, p. 106.

<sup>5</sup>Donald H. Chapin and Alfred W. Roberts, "Review and Evaluation of Internal Controls in the EDP Environment: A Flexible Approach," Computer Auditing in the Seventies (New York: Arthur Young & Company, 1970), p. 16.

manual accounting system. The question arises as to how these internal checks are affected by the introduction of computer-based accounting systems.

### Computer-Based Systems and Internal Control

#### Impact of Computers on Information Systems

Loss of the audit trail. The introduction of computers which process accounting information has strongly affected the outward appearance of the data processing function, although the basic principles of a sound internal control system are still valid. Some of the changes inherent in the processing function of a computer-based system, as compared to a manual processing system, include:

1. The EDP system may rearrange or reformat data and perform calculations on such data internally.
2. The EDP system may print out only summary data which bears no visible relation to the original input.
3. The EDP system employs equipment and programs which contain controls and edit procedures which operate internally (i.e., invisibly).
4. The EDP system is subject during the year to frequent change and updating, the effects of which may not be visible in either its input or output.<sup>6</sup>

The result of employing a computer-based data processing system is often the complete loss of an audit trail in the traditional sense. A similar problem involves the accessibility of information with remote communication terminals directly linked to the computer. These

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<sup>6</sup>Chapin and Roberts, p. 16.

terminals may allow unauthorized data access, as well as creating the problem of the disappearing audit trail. The availability of direct access equipment offers the temptation to completely avoid the creation of source documents or transaction logs.

Centralization of organization structure. Computer-based accounting systems and electronic data processing in general have affected the entire organizational structure of business enterprises. A centralization and concentration of data processing has eroded traditional organizational boundaries. "Electronic data processing enables a concentration of many processing steps into one department, thus eliminating the traditional internal control made available by the separation of duties in the recording process."<sup>7</sup> Not only have duties been concentrated among data processing employees, but there also has been a concentration of responsibility as departmental lines were eliminated or became less distinct.

Even within the data processing group there has been a tendency to merge duties and responsibilities. Systems analysts may write and execute programs; programmers may change program specifications or run programs on the computer; computer operators may have control over source documents, printouts, master files, and edit routines. These situations all aid in reducing the number of people needed for fraudulent collusion or manipulation.<sup>8</sup>

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<sup>7</sup>W. Thomas Porter, Auditing Electronic Systems (Belmont, California: Wadsworth Publishing Company, 1966), p. 5.

<sup>8</sup>Joseph DeFatta, "Internal Controls in Electronic Data Processing Systems" (unpublished Master's thesis, Louisiana State University, 1967), p. 12.



Additional processing speed and capacity. The capacity of computers to store and process accounting data makes the system more potentially valuable for improving business decisions. It also increases the susceptibility to manipulation, and accidental or intentional destruction of data. Problems involving human error in manual accounting systems are now much more critical because of the increased processing speed and lack of human intervention at each of the processing steps.

Increased system complexity. The impact of computer-based accounting systems on the study and evaluation of internal control is directly affected by the complexity of the system. An increasing source of trouble to the auditors are the more advanced integrated online - real time systems. Traditionally the records examined have consisted of printed reports, listings, and other documents which were readable by the auditor. To the extent that such records are still available, the auditor can use traditional procedures to study internal control.

The term "online - real time" is itself an indication of the type of problems encountered in the more advanced systems. This term refers to the existence of peripheral equipment connected to, and in direct communication with the computer's central processing unit. The feature of these systems which complicates the documentation of transactions is the direct input of data through any of the various remote input-output devices. This direct input must be properly logged to provide both adequate control and a trail for subsequent inquiry.

The random access feature of an online - real time system introduces new problems in the retrieval of documents. Source documents are

often filed in chronological order instead of being matched and filed by customer, supplier, or other more conventional filing methods. Copies of a purchase order, receiving report, and invoice are normally matched to create an accounts payable voucher, but in a computer-based system they may be processed separately with the matching routines being performed by computer. As a result of this change in processing procedure, the system will require a more detailed data classification and cross-referencing system.

The integrated system is designed to automatically perform all required processing from a single data input which is then stored in a central data bank. In an integrated system intermediate authorization documents are not prepared once the processing is initiated. When an inventory requisition is processed against the inventory and expense master files, the transaction might also trigger a purchase order without employee intervention. These advanced systems, and even less advanced batch processing systems, may be designed so that it is virtually impossible for the auditor to study the internal controls using the transactions approach. The auditor may be unable to trace the agreement between the accounting system's input and output. In such cases a new approach is needed.

#### Reaction of Auditors to EDP Systems

Dependence on EDP controls. In a manual accounting system internal control relates to the employee and relies on such human factors as alertness, care, acceptance of responsibility, and division of duties. The auditor's study and evaluation of such a system has also tended to run along the same lines. However, in a computer-based system these

human factors and the input-to-output transaction approach are replaced with various program and system controls. "The audit must establish the presence, throughout the period concerned, of EDP controls strong enough to insure that acceptable input must result in acceptable output."<sup>9</sup>

Relocation of the audit trail. Initial alarm about the disappearance of the audit trail has been replaced by what may be referred to as the "relocation" of the audit trail.<sup>10</sup> Relocation means that the prior requirement of being able to trace a transaction along each processing step can still be accomplished in the computer-based system by recognizing the changed form of the audit trail.

The assumptions underlying this approach relate to both the software and hardware involved. The assumption made regarding software is that the computer cannot really think and must depend on programmed instructions for all processing activity. Therefore, like data will always be processed in the same manner, and no defalcation can originate within the machine. The assumption made regarding hardware is that the electronic components of computers are extremely reliable and accurate, and are not subject to the same errors as clerks except at points of human intervention.

An additional assumption is that computer printouts can be obtained at intermediate processing stages whenever desired. Under these

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<sup>9</sup>Chapin and Roberts, "Review and Evaluation of Internal Controls," p. 17.

<sup>10</sup>Marvin Owen, "Auditing Electronic Data Processing Systems," (unpublished Master's thesis, Louisiana State University, 1965), p. 43.

conditions the auditor would maintain virtually the same attitude concerning the study and evaluation of internal control that is taken in the study and evaluation of internal control in a manual accounting system. However, in order to perform the study this approach requires certain adaptations to the audit procedures.

Utilizing traditional audit procedures. Relocating the audit trail to perform conventional audit procedures continues to remain valid in certain situations. A control copy of the program should be retained by the auditor. Throughout the period under audit, spot checks should be employed to determine that no unauthorized program changes have been made and that the control copy matches the operational program. Test decks and dummy transactions can be used to determine that the programs accurately process the data entered into the system. Observation of the computer center is a significant part of the audit examination in order to check the various controls in operation within the center.<sup>11</sup>

#### Audit Procedures Available to Study Internal Control

Numerous procedures and techniques are available to the independent auditor for use in studying and testing the internal controls of a computer-based accounting system. These procedures are presented in this section without regard to the basis of selection which the auditor must employ in order to provide a logical, coordinated examination which will allow him to evaluate all relevant aspects of the client's internal control system. The basis of procedure selection will be presented in the last section of this chapter.

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<sup>11</sup>Virgil F. Blank, "Electronics and the Internal Auditor," The Internal Auditor, March, 1957, p. 41.

Review of computer center security. Certain controls are useful in increasing the security of computer systems and the information these systems process. Many of these safeguards are derived from the internal controls applicable to manual data processing systems. To the extent that attention is given to the non-management classifications of employees, such as programmers, operators, and systems analysts, a great deal of the checking can be provided by an adequate internal audit staff. The independent study and evaluation of internal control can utilize the results of such tests where appropriate but cannot be limited to the internal audit staff testing. The following five items are examples of computer center controls which the auditor should look for.<sup>12</sup>

1. Careful screening of employee applicants for programming and computer operator positions. Screening should include background checks, correspondence with previous employers, and review of investigations provided by bonding agencies. This item is important due to the high turnover rate normally found among this group of employees.

2. Separation of programming and computer operating duties increases the number of people who must collaborate on fraudulent activities. Careful control should be exercised over employees having access to programs and data stored in the computer, and their access to physical facilities should be monitored.

3. Periodic rotation of duties performed by computer center personnel helps to decrease the possibility of fraudulent activities carried out over a sustained period of time. This is a control commonly employed

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<sup>12</sup>"Using Computers to Steal--Latest Twist in Crime," U. S. News & World Report, June 18, 1973, p. 42.

in banks and other situations where employees handle money, but it is equally applicable in computer installations.

4. Special codes, which are used to gain access to computer programs and data files, should be installed in the system and these codes should be changed frequently. An automatic alert might also be used to detect repeated attempts to use invalid codes. Procedures can also be adopted that require individuals who use programs to enter their names with each use.

5. Frequent analysis of job processing time may indicate that programs have been changed or that unauthorized operations have occurred.

Questionnaires. The most widely discussed procedure for the study and evaluation of internal control in current accounting literature is the use of the internal control questionnaire. The use of this technique has become almost synonymous with the study of a computer-based accounting system. While questionnaires are certainly useful they should only be viewed as a part of the work that the auditor must do. Most questionnaires are similar in nature, and two are reproduced in Appendix A.<sup>13</sup>

Many independent auditors use a standard internal control questionnaire not specifically prepared for the computer-based environment to first study the overall organization. They then use a supplementary questionnaire specifically prepared to study the computer installation.

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<sup>13</sup>These questionnaires are reproduced by permission of the publisher from: Gordon Davis, Auditing & EDP, pp. 326-340; and Walter B. Meigs, E. John Larsen, and Robert F. Meigs, Principles of Auditing (Homewood: Richard D. Irwin, Inc., 1973), pp. 189-197.

Other auditors use a questionnaire amended to include both the general operational features of the system, and the individual computer application.

Utilizing a single internal control questionnaire. The approach recommended by one author recognizes that the review ". . . should be carried out in the context of the entire data processing cycle, including both computer and non-computer processing and controls."<sup>14</sup> For this reason the questionnaire has been divided into two parts: (1) questions relating to the entire computer installation and data processing facilities; and (2) questions relating to individual data processing applications. Another useful aspect of a single, comprehensive questionnaire is that the questions are coded to correspond to the audit significance of the various internal controls. The following code designations used by Davis provide general suggestions only for the auditor and must be studied in the context of the particular system under evaluation.

Code:

- A - Control element which may affect the auditor's evaluation of internal control
- B - Control element which tends to affect data processing safeguards, but is not likely to affect audit procedures
- C - Element affecting operational effectiveness or efficiency

Utilizing supplementary EDP questionnaire. The second internal control questionnaire included in Appendix A is one designed by the

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<sup>14</sup>Davis, p. 325.

national public accounting firm of Laventhol and Horwath. This questionnaire supplements the internal control questionnaire covering the manual and semiautomatic portions of the system. From these manual and semiautomatic areas the auditor draws information to evaluate controls over assets and other data processing activities surrounding the computer processing. Both the Davis and Laventhol and Horwath questionnaires have a similar content and format requiring short answer or check-list responses. This format may be suitable for a study of the organizational and input-output controls but would not be sufficient for studying program controls since inadequacies in this area will not yet be apparent to auditor or respondent.<sup>15</sup>

System narratives. Written descriptions in narrative form can be prepared in conjunction with the internal control questionnaire. This permits the auditor to fill in gaps in the questionnaire responses in non-technical language and to relate the accounting system to the computer installation. Written narratives also can be used to describe relationships among various departments within the organization, and between the parent company and its various subsidiaries. This procedure is particularly important with audits undertaken for the first time and when substantial changes have been made in organizational structure. Organizational charts, employee duties, personnel authorizations, data flow, data files, records, and standard reports comprise the essential part of the information gathered for the preparation of system flowcharts.

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<sup>15</sup>Meigs, Larsen, and Meigs, p. 174.



System flowcharts. All studies of the system of internal control, whether a manual or electronic data processing system is used, can utilize system flowcharts as an integral part of that study. These flowcharts symbolically represent the logical path of data flowing through the accounting system, and the individual applications within the system. System flowcharts are an essential element in enabling the auditor to understand how the accounting system should be working. Additional observation, checking, and testing techniques can then be used to see how the system actually works. An evaluation of the comparison can then be made. The major difference between a system flowchart and a program flowchart is that the system flowchart assumes a broader scope and encompasses all activity within a particular department or operation. System flowcharts include: the source and nature of all data inputs; computer, machine, and manual processing operations; and the nature of disposition of all informational outputs.<sup>16</sup>

Program flowcharts. The program flowchart provides a more detailed description. It symbolically specifies each step in a particular computer program. Program flowcharts can explain operations indicated by the system flowchart and should be appropriately cross-referenced.

On both the system and program flowcharts the symbolic representation of the processing logic allows the auditor to better evaluate the program controls and draw inferences regarding the reliability of the output.

When the auditor needs to confirm that the program flowcharts represent current programs, there are software routines that will

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<sup>16</sup>Davis, p. 27.

flowchart a program on the computer's highspeed printer enabling the auditor to verify the operation of a program at a particular point in time. Other procedures and transaction tests remain necessary to provide reasonable assurance that the indicated controls were operating properly during the entire audit period.

Program test decks. An approach similar to tracing sample transactions through each step of a manual processing system can be accomplished in the computer-based accounting system by using test decks. These decks consist of data representing most of the exceptions and errors which may be encountered in actual processing. These errors may include missing transactions, erroneous transactions, illogical transactions, erroneous batch totals, erroneous hash totals, incorrect files, and out-of-sequence records. Test decks form an essential part of the initial system debugging phase and will generally be available from this source. Evaluation of the adequacy of an existing test deck requires a high level of technical competency, but, if the auditor can evaluate the deck, it can be used with appropriate adjustments and adaptations.

Even though the auditor maintains complete audit control over the data used, a test deck must be prepared for each computer program in the system. A less desirable way to obtain the test deck is for the auditor to prepare one from scratch. Preparation of a test deck from scratch often involves a prohibitive amount of audit time. Test deck data also may contaminate valid accounting records unless the test data can be properly coded to distinguish between real and dummy information. If a suitable test deck can be obtained, the auditor has the advantage

of being able to test the programs at various points throughout the audit year.

Generalized audit packages. Another technique which has received a great deal of attention is the development of generalized audit packages by several certified public accounting firms and software companies. These packages include various routines which can be adopted to specifications of the client's computer system. The specifications are then transferred to punch cards which become the job control cards for the computer run. To use these audit packages the auditor must be familiar with the information contained within the files and be able to identify the field location and size for data items within each record. Therefore, file and record layouts must be provided by the client before specification sheets can be prepared.

The generalized audit package consists of a series of computer programs which can be selected by the auditor and requires no further programming by the user. The audit package includes a number of narrative questions which require predefined coded answers. The generalized audit packages basically have been designed for the computer to extract information from magnetic tape or disk files under the auditor's control.

Performance features of generalized audit packages. The exact combination or routines available varies with the audit package used, but all of the packages generally perform the following tasks:

1. Test extensions and footings.
2. Summarize data and analyze the summaries.

3. Examine records for qualities such as completeness, consistency, and invalid conditions.
4. Select and print audit samples.
5. Select and print confirmation requests.
6. Compare identical data maintained in separate files for correctness and consistency.
7. Compare externally introduced audit data, such as industry averages, with company records to determine reasonableness.

Comparison of available audit packages. A review and comparison of 17 audit software packages was made in 1972.<sup>17</sup> The study was prepared under the auspices of the Institute's Committee on Auditing EDP Systems. Detailed analyses were made for various characteristics including: hardware requirements, basic processing capabilities, developmental approaches, information the auditor must furnish on job control cards, and training requirements for implementation.

After comparing various features of the selected audit packages, the authors concluded that no single package was clearly superior to others. Instead, they found that the auditor must evaluate priorities and select the package which best meets his requirements. As a guide for selecting the package, the following questions should be asked:<sup>18</sup>

1. What computer audit applications will be processed?
2. What computer resources are available?
3. What data media must be processed?

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<sup>17</sup>Donald L. Adams and John F. Mullarkey, "A Survey of Audit Software," The Journal of Accountancy, September, 1972, pp. 39-66.

<sup>18</sup>Adams and Mullarkey, pp. 48-49.

4. What level of data processing expertise is available?
5. What training is required?
6. How available is the package and what kind of back-up or support is provided?

Integrated test facilities. The use of integrated test facilities offers promise as one of the newest innovations in auditing computer-based accounting systems. With such a facility the auditor can ascertain whether the system of internal control has functioned properly throughout the year, rather than at one year-end test time. An integrated test facility (ITF) provides a continuous monitoring capacity in the system by allowing selected test input to be introduced simultaneously with genuine data, then trace the flow of transactions activated throughout the system. The simultaneous introduction of test data allows the auditor discretionary entry into the accounting system under normal operating conditions with a test for results which have been predetermined.

Testing internal controls with ITF. The integrated test facility allows the auditor to shift the emphasis of the study and evaluation of internal control from the examination of supporting documents, which are often not prepared in advanced systems, to the study and testing of the data processing system itself. Since computer programs process like data in the same manner according to predetermined decision rules, the testing can focus on these rules and limit the number of test transactions required.

Comparing test decks and ITF. The concept of testing the operation of the accounting system through the use of dummy data remains the same

as under the test deck approach. However, test decks have several disadvantages not shared by ITF. Test deck disadvantages include the difficulty of updating test data to reflect changes in the system, obtaining exclusive testing periods of computer time, and the lack of assurance that the programs in use at test time were used throughout the entire year. Under ITF a spurious entity is established against which all test data can be processed. This technique does not disturb or change any of the genuine client entities. This audit-created entity may be established on any basis of accumulating accounting information, such as division, store, dealer, department, employee, subsidiary, or account. With the test deck approach, the testing required a separate computer run. With ITF the test data can be randomly mixed with normal company transactions and processed sequentially.

Separating test data. The results of the test transactions must be filtered out from genuine company information before financial statements are prepared. As with the test deck method, the problem may be approached two ways. The first approach segregates the test transactions before any effect on accounting information by modifying the programs contained in the ITF package. Prior segregation requires a substantial amount of additional programming and debugging.

The second approach allows the test information to be included on the company's books and then removed with adjusting journal entries. Adjusting entries require the auditor to keep careful records of test transactions because incorrect entries would result in a misstatement of financial records. One study of ITF concludes that using adjusting

journal entries has been the easiest and most flexible of the two methods.<sup>19</sup>

Utilization of ITF by businesses. The Chaiken and Perry study included a survey of 200 large industrial, banking, utility, and insurance companies and found that the majority of respondents were familiar with or were using ITF.<sup>20</sup> Most of the utilization was by internal auditors or computer center personnel, but independent auditors expressed a hesitancy to use ITF for fear of altering the client's active files.<sup>21</sup> The risk of altering files can be minimized or avoided by prior determination of the existence of adequate backup files before implementing ITF in the study and evaluation of internal control.

#### Selecting Audit Procedures Needed to Study Internal Control

Recognizing audit inflexibility. Most of the literature in the audit area stresses the need to develop new procedures for dealing with the computer-based accounting system. In regard to the study and evaluation of internal control, the literature emphasizes the various EDP audit manuals, guides, questionnaires, and other techniques designed to cope with the loss of the visible audit trail. While these procedures have proven useful on numerous occasions, there has been a tendency to force all situations into a pre-cast, inflexible mold. As a result of this inflexibility, a gap developed between what was

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<sup>19</sup>Barry R. Chaiken and William E. Perry, "ITF-A Promising Computer Audit Technique," Accounting and Auditing Section, The Journal of Accountancy, February, 1973, p. 76.

<sup>20</sup>Chaiken and Perry, p. 76.

<sup>21</sup>Chaiken and Perry, pp. 77-78.

available from the study and what was needed by the auditor. Under such restraints the auditor often felt that he should perform an in-depth study of every facet of the computer system. This exhaustive investigation ignored the fact that in many cases the computer was not even involved in processing the information contained in financial statements.

### An Approach to the Selection of Internal Control Procedures

The basis for a new and flexible approach is the recognition that the importance of the EDP portion of the system in relation to the entire system should influence the breadth and depth of the auditor's involvement with the computer, and that continued use of non-computer-oriented approaches may be appropriate. The approach to the review and evaluation of internal controls should allow the auditor to vary his efforts within the EDP area according to the circumstances in each case.<sup>22</sup>

There are three phases to the flexible approach: preliminary review, system survey, and application analysis. Each step becomes progressively more detailed and computer oriented as the auditor determines the degree to which the system must be examined. Auditor involvement with the computer hinges on the audit significance of each particular situation.

#### Preliminary Review

In the preliminary review the auditor looks at the entire organization to determine the importance of the computer system to the organization and, therefore, to the audit. This review should be performed before any other audit work so that a preliminary determination can be made as to the application of computer auditing techniques and as to how the evaluation of the computer system will relate to the evaluation

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<sup>22</sup>Chapin and Roberts, "Review and Evaluation of Internal Controls," p. 17.



of internal controls. The review allows the auditor to become familiar with the general nature of the data processing system, the computer center personnel, and the service relationship between the computer center and other departments.

In the initial audit engagement or when data processing has been changed to a computer-based system, the auditor has an obligation to become well-oriented to the client's overall operation. Information which the auditor may need to obtain includes: organization charts indicating employee names, titles, lines of authority, and responsibilities within and between departments; prior year workpapers; client literature; and standard operating procedures. The auditor can then perform a system survey.

### System Survey

In a system survey the auditor reviews and evaluates the computer system. During this review the auditor assembles information on all computer applications and attempts to determine which applications have audit significance. At this point the information gathered remains general in nature, rather than highly technical, and furnishes a basis for evaluating the system. The auditor then studies those applications having audit significance to determine whether non-computer-oriented techniques provide an adequate and practical review, testing, and evaluation of internal control. The applications for which traditional techniques would not be adequate can then be subjected to an application analysis. The system survey gathers five types of documentation: a general description of the system, application narratives, application surveys, a general survey, and a system evaluation. All

audits of a client using the computer would contain a general description of the entire EDP system. The scope and objectives of all major applications would be included whether deemed to have audit significance or not. Application narratives extend the general description where each computer application has been studied in greater detail. These narratives provide an important input for considering the audit significance of each application. The narrative includes inputs, outputs, and processing performed. Based upon this information the auditor identifies situations where further computer auditing techniques have been indicated and formulates an audit program of procedures to be employed.

After computer applications have been narrowed to those having audit significance, application surveys would be prepared for this group. In this systematic manner the auditor avoids unnecessary work by concentrating on areas in which the need has been established for internal control evaluation. The application survey includes: a description of client documentation; listings of all outputs, inputs, and files; and other basic information relating to outputs and files.

From the information obtained in the application survey the auditor prepares a proposed audit program for tests of transactions, along with possible uses of computer-assisted audit techniques. At this point narratives and diagrams of the visible audit trail can be developed together with a list of gaps in that trail. Besides concentrating on applications of audit significance, this approach also allows the auditor to obtain useful data to build a general survey of the computer system. The general survey fills information gaps about the more general aspects of the client's organization, procedures, equipment, software, and

operating systems. The auditor performs this additional work, however, only if warranted in regard to the importance of the computer system to the client's accounting system and financial statements.

The system evaluation represents the final stage of the system survey, and its preparation can be timed to provide the documentation needed to support an evaluation. The timing of the system evaluation remains flexible, depending on the degree of audit significance found in the study. If the computer performs no accounting functions, the study may be prepared after the general description of the system and application narratives. If the computer performs functions of audit significance it will be prepared after the application and general surveys. In either case, the system survey contains a written evaluation of the importance of the computer installation to the accounting function. This evaluation determines which portions of the system are to be subjected to detailed application analysis.

#### Application Analysis

In this final phase of review and evaluation of internal control, the auditor focuses on the accounting applications considered appropriate for computer-oriented procedures. The application analysis can be similar to other approaches presented in the current literature, but most of these approaches move straight to an application analysis without prior review and analysis of the overall system.

In conjunction with system flowcharts, program flowcharts, and program narratives, the auditor prepares a detailed evaluation of internal control for a specific application. The components related entirely to the computer-based aspects of the accounting system can then

be combined with the non-EDP aspects of the system. Machine and program controls, including edits and codes by which input and output records can be recognized, would be merged with the manual controls and other points of human intervention in order to evaluate all portions of the internal control system.<sup>23</sup>

#### Summary

Sound internal control is a necessary part of an effective accounting system. In order for the system to be effective it must not only process the accounting data efficiently, but must also provide a coordinated basis for adequate evaluation of the accounting information generated. Effective internal control within an accounting system provides increased assurance that the information is dependable, and can be used to produce reliable financial statements.

The basic elements of a system of internal control are the same for both manual and computer-based accounting systems. A system of internal control should begin with a plan of organization which provides for appropriate segregation of functional responsibilities. A system of authorization by supervisory personnel and other accounting procedures adequate to provide accounting control over assets, liabilities, revenues, and expenses is necessary. Sound accounting and management practices must be followed in the performance of duties by each department. There must be company personnel with the knowledge, skills, and personal attributes necessary to meet their job requirements and responsibilities.

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<sup>23</sup>Chapin and Roberts, p. 21.

The auditor's study and evaluation of internal control also involves basic steps applicable to both manual and computer-based systems.

These steps include:

1. Examining the system to insure that controls stated by the client actually exist.
2. Testing the system to determine whether or not these controls are operating properly.
3. Evaluating the strengths and weaknesses of the system as a basis for determining additional audit procedures to be performed.

Internal control can be separated into administrative and accounting controls. Administrative controls are those which aid management in the efficient operation of business activities. Deficiencies in this area would normally not require the auditor to change his examination procedures, but are instead included as recommendations to management made in the audit report. Accounting controls are of prime concern to the auditor because they relate to the safeguarding of assets, recording of transactions, and financial reporting. Deficiencies in accounting controls may lead to additional audit procedures being performed subsequent to evaluation.

The impact of computers on internal control and the accounting system includes both organizational and data processing aspects. There has been a centralization of data processing around the computer center. This concentration of activity tends to obliterate traditional departmental boundaries, and with them go some of the internal controls usually found in manual accounting systems. A great deal more of the data processing in a computer-based accounting system takes place in

automatic sequence within the computer. Internal processing often leaves no visible audit trail from input to output, such as intermediate authorizations and documents, thus requiring the use of audit procedures specifically adapted to the study of internal control in a computer-based accounting system.

There are many procedures and techniques suited to studying internal control in a computer-based accounting system. The ones selected for discussion included:

1. Questionnaires
2. Narrative description of the accounting system
3. System flowcharts
4. Program flowcharts
5. Program test decks
6. Generalized audit packages
7. Integrated test facilities

All of the items discussed are helpful in some aspect of the study or testing of internal control. A coordinated combination of procedures and techniques, selected according to audit circumstances, is necessary to provide evidence upon which to base an evaluation of the system of internal control. The problem faced by the auditor is in determining which of the procedures are to be employed in order to provide the basis for subsequent evaluation.

The initial reaction of auditors to the increasing invisibility of the audit trail was to first disregard the changing environment, and continue to study and evaluate the visible controls. The next step was trying to relocate the audit trail, and then study each segment of the data processing flow. This led to an overemphasis of detailed

methodology, using an extensive but inflexible array of procedures and techniques to perform in-depth studies of computer applications.

Recognizing the unnecessary audit time spent on some of the procedures used, a more flexible program to study and evaluate internal control has been devised. This systematic approach consists of three distinct phases:

1. Preliminary review
2. System survey
3. Application analysis

Each phase of this approach is taken in order, becoming progressively more detailed and computer oriented as the auditor determines the degree in which he must examine the system. The depth of involvement with the computer depends on its relative importance to the accounting system, and the audit significance of each computer application. One major point is that the overall importance of the computer system to the audit examination is determined before detailed testing and evaluation of internal controls is performed.

Where computer processing is highly integrated in the accounting system the auditor should be aware of computer center controls which might affect his overall evaluation. Many of these safeguards are derived from those generally used in manual data processing systems, and adapted to the computer environment. In computer applications having audit significance, the auditor must select the procedures and techniques needed to perform an adequate study and evaluation of internal controls. From this evaluation he determines the audit procedures that are required for his examination of the financial statements.

The importance of the auditor's study and evaluation of internal control has been demonstrated in the Equity Funding case presented in Chapter IV. This case involved a massive fraud perpetrated by an insurance conglomerate using a computer-based system to assist in the preparation of false and misleading financial statements distributed to outside third parties.

The fairness of these financial statements was attested to by a certified public accounting firm based on audit examinations supposedly conducted according to generally accepted audit standards. This case was presented in terms of the effects of the fraud on outside third parties, and with particular reference to the accounting aspects of the case. These issues involve questions of adherence to the general audit standards and standards of field work, and therefore have a direct bearing on the adequacy of those standards as guidelines for selecting appropriate audit procedures.



CHAPTER IV  
THE EQUITY FUNDING CASE

Survey of the Case

Equity Funding Corporation of America is formed. In 1960, Stanley Goldblum, along with other associates, joined the small, recently-organized Tongor Corporation. The following year the company name was changed to Equity Funding Corporation of America, and the firm embarked on a marketing program involving life insurance policies and mutual fund shares in a rather unique investment package.

The investment plan. In the special investment program a specified amount of mutual fund shares would be purchased over a ten year period, and these shares would be pledged as collateral for loans to buy term life insurance. The insurance premiums were to be paid with the proceeds of the loan. At the end of ten years, the mutual fund shares hopefully would show an appreciation in price sufficient to allow the customer to sell shares to repay the loan and still have enough left for a tidy investment. The major selling point in this plan was that it permitted individuals to invest their money in mutual funds and receive life insurance as an added benefit. Presumably, the insurance would be paid for by the rise in stock prices. "Other companies offered the same sort of package, but while they merely offered it, Equity Funding

boldly merchandised it."<sup>1</sup> Company salesmen had a strong incentive to push the package deal because commissions were involved for the sale of mutual fund shares as well as the life insurance policy.

Reputation within insurance industry. Equity Funding rapidly gained a reputation for its aggressive policies. Among other insurance companies Equity Funding became known for "twisting insurance."<sup>2</sup> This means that the salesmen tried to persuade potential customers to cancel old policies with other companies and buy new ones with Equity Funding. No real problems were encountered in these early days. Even the questionable reputation of the plan within the insurance industry did not prevent Equity Funding from growing in size and in prestige as an attractive investment. "The numbers were good, and . . . when all is said and done analysts go back to the numbers."<sup>3</sup> The desire to maintain this phenomenal growth became the primary goal of certain company executives.

The acquisition period. At first Equity Funding had acted solely as an agent for other companies in the sales of insurance and mutual fund shares. A mutual fund called Equity Growth Fund was formed in 1966. In rapid succession Fund of America was acquired from IOS, Ltd., and Republic Technology Fund, renamed Equity Progress Fund, was added. At the same time Equity Funding was acquiring mutual funds, insurance

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<sup>1</sup>"The Spreading Scandal at Equity Funding," Business Week, April 14, 1973, p. 60.

<sup>2</sup>Hal Lancaster and G. Christian Hill, "Stanley Goldblum Is Man of Many Facets--But What Are They?" The Wall Street Journal, April 27, 1973, p. 12, col. 2.

<sup>3</sup>Lancaster and Hill, p. 12, col. 2.

companies were being purchased. Presidential Life of Chicago was acquired and renamed Equity Funding Life Insurance Company. Bankers National Life of Parsippany, New Jersey and its New York subsidiary were acquired followed by the acquisition of Northern Life of Seattle in mid-1972. Another merger, involving Executive National Life Insurance Company of California, also was pending. Equity Funding was known on Wall Street as a "performance stock". From a price of \$6 a share at its introduction in 1964, the company's stock soared to a 1969 high of \$80 a share. However, there were several facts which could not be ignored in the harsh light of economic reality. These internal problems grew as the company grew, leaving it perennially hungry for cash.

The cash flow problem. Life insurance accounting in effect during this period normally reflected a profit to the insurer company only after a policy had been in force several years. In the life insurance industry the initial sales commissions and other costs often were greater than the first year's premium. After the first year an increasing amount of premium represented profit to be reported by the company. With Equity Funding the profit from the sale of the insurance was not realized in cash for ten years even though expenses had to be paid currently.<sup>4</sup> To remedy this problem, Equity Funding began to heavily reinsure new business--a practice already in widespread use throughout the insurance industry.

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<sup>4</sup>William E. Blundell, "A Scandal Unfolds: Some Assets Missing, Insurance Called Bogus at Equity Funding Life," The Wall Street Journal, April 2, 1973, p. 8, col. 4.

The cash flow solution and the beginning of fraud. Under normal circumstances reinsurance is useful only as a short-term aid to cash flow problems because at some point the company will run out of policies to sell. In Equity Funding's case, however, reinsurance sales became a major necessity, and policy holders were created out of thin air to avoid running out of the salable product. The phony policyholders were altered versions of real ones. They were scattered throughout the files but were linked together by secret code numbers. The files were stored on magnetic tape and the phony policies could be excluded from selected printouts by computer programs designed specifically for this purpose.

Former employee alleges fraud. On March 6, 1973, a former Equity Funding employee exposed the manipulation by telephoning the New York State Department of Insurance and a financial analyst in New York. The calls were of interest to each party even though each reacted quite differently to the information. The New York insurance department passed the information to insurance regulatory agencies in Illinois where Equity Funding Life Insurance was registered and in California where the parent company resided. Official investigations concerning the allegations were started. "Essentially, though, Secrist [the employee] did not trust governmental agencies to do the job."<sup>5</sup> His call to the financial analyst, Raymond Dirks, led to a very different kind of action. At the time of Secrist's call Raymond Dirks was a senior vice-president at Delafield Childs, Inc. and a recognized expert in

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<sup>5</sup>"The Spreading Scandal," p. 80.

insurance company stocks.<sup>6</sup> An investigation of the charges included a search through personal files, telephone calls, and interviews with various brokerage houses, investment analysts, and large institutional investors. Among those Dirks talked to were Institutional Investors, Inc. and John W. Bristol & Co. Both companies were affiliates of Boston Co., a Delafield Childs client. Also included were Morgan Guaranty Trust Co. of New York, Chemical Bank of New York, Loews Corp., and Bankers Trust Co. of New York.

Stock market reaction. Rumors that something might be wrong at Equity Funding began to spread on Wall Street. The volume of Equity shares traded suddenly began to skyrocket. Normal volume had run about 14,000 shares a day, but went to 45,000 shares on March 15, 123,000 shares on March 19, 524,000 shares on March 21, and 768,000 shares on March 26. There was a corresponding drop in the share price from 27-1/4 to 14-3/8 during this time. Heavy sellers during the period before trading was halted included institutional investors such as John W. Bristol & Co., Chemical Bank of New York, Bankers Trust Co. of New York, and Institutional Investors, Inc.<sup>7</sup>

Institutional investors and brokers. Loews Corp. continued to be a heavy buyer until the last day of trading in Equity Funding stock. Lawrence A. Tisch, at that time chief executive of Loews Corp., made a very pertinent point when he stated that

. . .there are a lot of geniuses after the fact but there's no way of adjusting for massive fraud in analyzing a stock. . . .  
Either you believe the whole system of investing is based on fraud

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<sup>6</sup>"The Spreading Scandal," p. 80.

<sup>7</sup>"The Spreading Scandal," p. 81.

or you do business on the basis of audits, insurance regulation and other safeguards. The idea of massive fraud never entered our minds . . . three of the best insurance analysts in Wall Street called us recommending the stock . . . it looked like a very good value in a distressed block.<sup>8</sup>

Loews Corp. was joined by legions of small investors in holding on to their Equity Funding stock. Many small investors apparently were unaware of the rumors and allegations flying back and forth on Wall Street. One reason for the confusion among larger investors was the conflicting nature of the information being circulated. A report from Hayden Stone, Inc., dated eight days before trading was suspended, noted rumors that regulatory authorities were investigating Equity Funding. After checking with state insurance officials in Illinois, New Jersey, and Washington, the report stated that each official told Hayden Stone, Inc. representatives that no investigation was in progress and that none was anticipated. The officials also noted that no other insurance authority or department was known to be currently investigating Equity Funding. The analysis concluded:

Several rumors have been circulating which have affected Equity Funding's stock. We have checked these rumors, and there appears to be no substance to any of them. . . . At 6.0 times estimated 1973 fully diluted earnings, we believe that Equity Funding is considerably undervalued.<sup>9</sup>

Hayden Stone, Inc. was not the only brokerage house to continue recommending Equity Funding stock. In a February, 1973 report signed by its analyst, Cowen & Co. recommended the purchase of Equity Funding for

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<sup>8</sup>Charles J. Elia, "Just Why Did Loews Buy Equity's Stock as Others Bailed Out?" The Wall Street Journal, April 25, 1973, p. 1, col. 4.

<sup>9</sup>Richard Rustin and Priscilla Meyer, "How the Word Spread About Equity Funding: Was It Inside Data?" The Wall Street Journal, April 9, 1973, p. 1, col. 6.

aggressive accounts.<sup>10</sup> In a January 30, 1973 analyst's report, Burham & Co. said that they ". . . regard the stock . . . an excellent value and rate it a buy."<sup>11</sup> A report circulated to its salesmen by Oppenheimer & Co. on March 21, 1973 said that they could not completely account for the fall in Equity Funding's stock price and felt that the company had assembled one of the most outstanding growth records of any insurance company in the United States.<sup>12</sup> The fact that large institutional investors were selling Equity Funding stock during this time caused some individuals to suspect that these parties had access to inside information. Trading in Equity Funding stock was suspended and both the Securities and Exchange Commission and the New York Stock Exchange moved to take a closer look at the situation.

The New York Stock Exchange. The New York Stock Exchange, in an unprecedented announcement, brought disciplinary charges against Raymond Dirks, Walter B. Delafield, and Delafield Childs, Inc. Dirks was accused of violating various exchange rules and the antifraud provisions of the Securities Exchange Act of 1934 ". . . by furnishing his clients and others with material adverse information . . . during the period March 6 through March 26 when such information wasn't publicly available. . . ." <sup>13</sup> Specific charges include the violation

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<sup>10</sup>Robert J. Cole, "Anatomy of an Insurance Scandal," The New York Times, April 15, 1973, p. 9-F, col. 4.

<sup>11</sup>Cole, p. 9-F, col. 4.

<sup>12</sup>Rustin and Meyer, p. 1, col. 6.

<sup>13</sup>"Equity Funding Fraud Charged in SEC Suit," The Wall Street Journal, April 4, 1973, p. 4, col. 1.

of New York Stock Exchange Rules 345, 401, 436 which require adherence to equitable trade and business practices and prohibit the spreading of rumors that could affect market action.<sup>14</sup>

Securities and Exchange Commission. The Securities and Exchange Commission filed suit against the Equity Funding Corporation rather than against specific individuals. In the federal district court suit the company was charged with violations of federal securities laws and fraud and prohibited from engaging in fraudulent acts in the future.<sup>15</sup> The Securities and Exchange Commission request for appointment of a special investigator to oversee the affairs of Equity Funding and its subsidiaries was granted. Touche Ross & Co. was appointed by the court to audit the 1972 financial statements of Equity Funding Corporation of America and subsidiaries, and to reaudit the 1970 and 1971 statements for Equity Funding Life Insurance Company.

Bankruptcy for Equity Funding. On April 5, 1973, the court ordered Equity Funding to file a petition for protection under Chapter 10 of the Federal Bankruptcy Act.<sup>16</sup> The company immediately complied with this order, although the Security and Exchange Commission wanted Equity Funding to continue to operate without resort to the bankruptcy laws. Under Chapter 10 the company had protection from creditors, and control passed to the court-appointed trustee with national jurisdiction to investigate the company's affairs and complete its financial reorganiza-

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<sup>14</sup>"Equity Funding Fraud," p. 4, col. 1.

<sup>15</sup>"Equity Funding Fraud," p. 4, col. 1.

<sup>16</sup>William E. Blundell, "Equity Funding Ordered to File for Chapter 10," The Wall Street Journal, April 5, 1973, p. 2, col. 2.



tion. The bankruptcy filing blocked an attempt by the company's major lenders to seize almost \$15 million deposited with them as compensating balances under a loan agreement. These lenders included Wells Fargo, First National City Bank of New York, Franklin National Bank, and National Bank of North America. The banks claimed the money was only a partial offset to some \$50 million owed them by Equity Funding.

The SEC plan. The court order came shortly after it became apparent that the company would be unable to operate under a plan advocated by the Securities and Exchange Commission. This plan also called for a special investigator, working under the supervision of the court and the SEC. However, the plan would not have prevented the seizure of company assets. Such a seizure, as attempted by the major lenders, would have had the effect of dismembering Equity Funding, and rendered future action by stockholders and other interested parties useless. According to a Securities and Exchange Commission source in Washington, prospectuses for Equity Funding's three mutual funds required amendment to reflect the Chapter 10 filing and other material developments.<sup>17</sup>

Trustee's report. Mr. Loeffler, the court-appointed trustee, consistently maintained that Equity Funding was salvageable as a viable enterprise, despite short-term problems and the need for substantial reorganization. In an April, 1973 interview, Loeffler cautioned that he was ". . . working on very preliminary 'guestimated' figures indicating that the company seems to be solvent."<sup>18</sup> This solvency estimate was

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<sup>17</sup>Blundell, "Equity Funding Ordered to File," p. 2, col. 2.

<sup>18</sup>William E. Blundell, "Equity Funding May Well Be Salvageable But Cash is Problem, Trustee Indicated," The Wall Street Journal, April 19, 1973, p. 18, col. 1.

based primarily on the net realizable value of the assets in the company's many subsidiaries. He was much less optimistic about the short-term cash position and recognized the possibility that some of the subsidiaries might have to be sold to raise cash in order to save the rest of the company.

In a later appearance in federal court, Mr. Loeffler stated that he was still ". . . reasonably confident that the scandal-ridden company's audited balance sheets will show assets at least equal to scheduled liabilities."<sup>19</sup> This conclusion was part of the report of preliminary findings issued for creditors and stockholders at a hearing before Judge Pregerson of the Federal District Court. The report also stated that fraudulent activities took place only in the parent company and one subsidiary, Equity Funding Life Insurance.<sup>20</sup> Several other parties to the proceedings concurred with the conclusion that the company could be rehabilitated rather than liquidated. These parties included Judge Pregerson, Bankruptcy Referee James E. Moriarty, and regional administrator of the Securities and Exchange Commission, General E. Boltz. The trustee cautioned that accurate financial figures would not be available until the fraud audit was complete and a report issued by Touche Ross & Co.

The post-fraud audit report. Touche Ross & Co. issued an audit report in February, 1974. This report gave the first concrete estimate of the true financial condition of Equity Funding and showed the company

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<sup>19</sup>"Equity Funding's Trustee Says He Believes Audit Will Show Assets to Cover Liabilities," The Wall Street Journal, June 5, 1973, p. 7, col. 2.

<sup>20</sup>"Equity Funding's Trustee Says," p. 7, col. 2.

to be worth \$185 million less than had previously been claimed. The company's 1972 annual report, which was ready for mailing but never issued, showed consolidated assets of \$747.5 million and a net worth of \$143.3 million as of December 31, 1972. Touche Ross stated that the consolidated assets were \$488.9 million as of April 5, 1973, the date they were retained by the court.<sup>21</sup> Instead of a positive net worth of \$143.3 million, Touche Ross placed the figure at a negative \$42 million-- a discrepancy of \$185 million.

Touche Ross threw out \$143.4 million in claimed assets of Equity Funding as fictitious or fraudulently inflated. This includes \$62.3 million of funded loans receivable; . . . money purportedly owed the company by holders of life-insurance policies who used mutual fund shares as collateral to pay the policy premium . . . but were never made. . . . [Touche Ross] eliminated \$35.4 million in inflated valuation of Equity Funding Life, which has been written off as nearly worthless . . . and other fictitious transactions which created paper assets without any actual worth . . . . an additional \$42.2 million in write-downs unconnected with the fraud items . . . and minor downward adjustments totaled \$17.2 million.<sup>22</sup>

Unaccounted for at this time was \$60 million to \$80 million of the \$204 million raised through borrowings or securities offerings and outstanding as of April 5, 1973. Investigators did not find any large scale theft of corporate funds, other than some embezzlement by fictitious death claims, and Mr. Loeffler concludes that the missing funds were used to cover the substantial operating losses.<sup>23</sup>

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<sup>21</sup>William E. Blundell, "Equity Funding's Worth Is \$185 Million Less Than Firm Had Claimed, Trustee Estimates," The Wall Street Journal, February 22, 1974, p. 5, col. 3.

<sup>22</sup>Blundell, "Equity Funding's Worth," p. 5, col. 3.

<sup>23</sup>Blundell, "Equity Funding's Worth," p. 5, col. 3.

When the scandal broke the company was virtually paralyzed by the vast number of employees who quit or were dismissed. This fact, along with the chaotic accounting being used, made it impossible to reconstruct an accurate earnings statement. The company "may have been issuing fraudulent statements since as early as 1965, . . . and may never have generated any real profits."<sup>24</sup>

Trustee disposition plans. The results of the audit by Touche Ross were very important in providing a firm foundation upon which to realistically assess Equity Funding, but the trustee still faced considerable problems. The majority of these problems related to the company's reorganization, and the numerous lawsuits and indictments resulting from disclosure of fraudulent activities. Although not detailing the specifics of the plan for reorganization, Mr. Loeffler indicated that it might become an insurance holding company built around Banker's National Life Insurance of Parsippany, New Jersey, and Northern Life Insurance Company of Seattle, Washington.<sup>25</sup> These two profitable subsidiaries were largely unaffected by the fraud. A broker-dealer subsidiary called Independent Securities Corporation would also be retained, but Equity Funding Life Insurance Company would be liquidated.

Other subsidiaries which have been sold or were in the process of being sold included Bishop's Bank of the Bahamas, Liberty Savings and Loan Association of Los Angeles, the company's oil, gas, and real estate holdings, and Ankony Corporation. Litigation delayed the sale of Liberty

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<sup>24</sup>Blundell, "Equity Funding's Worth," p. 5, col. 3.

<sup>25</sup>Blundell, "Equity Funding's Worth," p. 5, col. 4.

Savings and the overall reorganization because the contingent liabilities involved were considered impossible to accurately assess.

Litigation affecting reorganization. One of the largest of the lawsuits filed in this case was by the Fidelity Corporation of Virginia, a financial services company that has \$23 million (3.5% of its total assets) invested in Equity Funding. In addition to 15 individuals named in the suit, five accounting firms were also named as being involved in various audit capacities with the parent company or subsidiaries. The firms named were: Wolfson, Weiner, Ratoff & Lapin; Seidman & Seidman; Haskins & Sells; Joseph Froggatt & Company; and Coopers & Lybrand.<sup>26</sup> Robert Loeffler also filed a civil suit for \$1 million against Stanley Goldblum, former chairman and president of Equity Funding. Both litigations were still pending in federal court.

Federal grand jury indictments. The most involved legal action yet taken in this case was a federal grand jury indictment of 22 men after a seven month period of investigation. In a 105 count indictment the 22 were charged with

. . . conspiring to commit felonies including securities fraud, mail fraud, bank fraud, interstate transportation of counterfeit securities and other securities obtained by fraud, electronic eavesdropping, and the filing of false documents with the Securities and Exchange Commission.<sup>27</sup>

Of the 22 defendants, 20 were former executives and employees of Equity

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<sup>26</sup>"Fidelity Corp. of Virginia Sues 15 Persons, Equity Funding, 5 Accounting Firms for Fraud," The Wall Street Journal, April 16, 1974, p. 4. col. 1.

<sup>27</sup>William E. Blundell, "Equity Funding Fraud Charges Filed Against 22," The Wall Street Journal, November 2, 1973, p. 2, col. 2.

Funding. The indictment also listed four former employees as unindicted co-conspirators, including Ronald Secrist, the person who originally contacted state insurance regulators and Raymond Dirks concerning the fraud.

Accountant and auditor indictments. From an accounting standpoint, the significant indictments were against two non-employees Solomon Block and Julian Weiner. Both men were connected with the public accounting firm of Wolfson, Weiner, Ratoff & Lapin. This firm audited the statements of Equity Funding from the company's inception, and merged with Seidman & Seidman in 1972. Mr. Block was the audit senior and Mr. Weiner was the partner in charge of the Equity audit. "Seidman & Seidman said it parted company with Messrs. Block and Weiner . . ." in July, 1973, after the fraud was discovered.<sup>28</sup> These two men were charged with conducting incomplete and insufficient audits, and helping prepare false financial statements for the company. Supposedly working with the two was Marvin Lichtig, a former Wolfson, Weiner, Ratoff & Lapin employee and later an officer of Equity Funding. A portion of this false information was allegedly included with full knowledge of the defendants in a Form 10-K filed with the Securities and Exchange Commission and stock exchanges.<sup>29</sup>

Other indictments. The release of the federal indictments prompted disclosure of earlier indictments made by the Dupage County, Illinois grand jury. These charges included 23 indictments totaling 95 counts

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<sup>28</sup>Blundell, "Equity Funding Fraud Charges," p. 2, col. 2.

<sup>29</sup>Blundell, "Equity Funding Fraud Charges," p. 2, col. 2.

returned against 22 individuals. Equity Funding Life Insurance Company was registered as an Illinois company, and all defendants " . . . were charged with conspiracy to enter false information on the books of Equity Funding Life in order to deceive the Illinois insurance director."<sup>30</sup> Other counts involved the preparation of false general ledger entries. Additional indictments were returned by a New Jersey grand jury against eight former officials of Equity Funding for alleged insurance fraud in connection with the 1971 acquisition of Bankers National Life Insurance Company.<sup>31</sup>

Guilty pleas and convictions. Nineteen of the men named in the federal indictments pleaded guilty and received sentences ranging from eight years in prison and a \$20,000 fine to probation and a \$1,000 fine. The longest prison sentence went to Stanley Goldblum, former chairman and president of the Equity Funding Corporation of America. Mr. Goldblum was sentenced to eight years in prison and a \$20,000 fine after pleading guilty to one count of conspiracy and four counts of mail fraud.<sup>32</sup> Other sentences included five year prison terms for Fred Levin and Samuel Lowell, both of whom were former executive vice presidents of Equity Funding.<sup>33</sup>

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<sup>30</sup>Blundell, "Equity Funding Fraud Charges," p. 2, col. 2.

<sup>31</sup>"Equity Funding's Eight Former Officers Indicted Again," The Wall Street Journal, May 17, 1974, p. 14, col. 2.

<sup>32</sup>Hal Lancaster, "Equity Funding's Ex-Chief Draws Eight Year Jail Term," The Wall Street Journal, March 18, 1975, p. 12, col. 3.

<sup>33</sup>"Equity Funding Corp. Ex-Officer Sentenced to Five Year Prison Term," The Wall Street Journal, March 25, 1975, p. 14, col. 2.

Three other defendants were found guilty on multiple criminal counts of securities fraud and filing falsified financial statements with the Securities and Exchange Commission. Julian Weiner, former partner in charge of the Equity Funding audits for the accounting firm of Wolfson, Weiner, Ratoff & Lapin, was convicted on six counts of securities fraud, three counts of filing false registration statements and one count of filing a false 10-K report.<sup>34</sup> Solomon Block, former audit manager on the Equity Funding audits, was convicted on five counts of securities fraud, one count of filing a false registration statement and one count of filing a false 10-K report.<sup>35</sup> Marvin Lichtig, former audit manager on the account until he was hired by Equity Funding in 1969, was convicted on six counts of securities fraud, five counts of filing false registration statements, one count of filing a false listing application with the New York Stock Exchange and one count of filing a false 10-K report.<sup>36</sup>

#### The Parties Affected by the Equity Funding Fraud

Other than company employees and executives, there were primarily five groups affected in varying degrees by the Equity Funding fraud. These parties included the life insurance policyholders, the insurance industry, stock analysts, investors in Equity Funding, and independent certified public accountants.

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<sup>34</sup>"Three Former Equity Funding Auditors Convicted of Fraud, Filing False Data," The Wall Street Journal, May 21, 1975, p. 11, col. 1.

<sup>35</sup>"Three Former Equity Funding Auditors," p. 11, col. 1.

<sup>36</sup>"Three Former Equity Funding Auditors," p. 11, col. 1.



Life insurance policyholders. Participants in life insurance programs of Equity Funding Life Insurance Company appeared to have the best chance of emerging from the scandal unscathed. At the time the fraud was discovered, the company claimed to have nearly 97,000 policies in force with a face amount of \$3.2 billion. Of these, audit figures indicated that about 33,000 policies were valid, representing a face value of approximately \$1.2 billion. In a plan jointly prepared by the Illinois and California insurance regulators, Equity Funding Life Insurance would be dissolved, and all valid policies in force as of January 1, 1974 would be transferred to Northern Life Insurance Company.<sup>37</sup> When this plan was prepared, there were some 26,000 policies remaining in force from the original 33,000 valid ones. Most of the others had been canceled or allowed to lapse after the public disclosure of fraud. The holders of policies transferred to Northern Life Insurance Company would retain full policy benefits, including the right to borrow on the policy and the cash surrender value. Another segment of the plan would allow the policyholders who canceled to have their policies reinstated with Northern by paying the past-due premiums and by meeting the underwriting requirements of Northern.

The insurance industry. New restrictions were anticipated for the insurance industry operations and practices, particularly in the reinsurance area. The trusting nature of this industry was a key factor in the acceptance of 66,000 bogus life insurance policies sold by Equity Life to other insurance companies. "Millions of dollars of business is

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<sup>37</sup>"Equity Funding Policy Transfer Is Recommended," The Wall Street Journal, March 26, 1974, p. 10, col. 2.

done over the telephone on faith alone. To violate this trust would be to invite immediate ostracism."<sup>38</sup> Some of the largest insurance companies in the United States were among those victimized, including: Anderson Clayton Company's Ranger National Life Insurance Company, the Connecticut General Life Insurance Company, the Pennsylvania Life Insurance Company, the Kentucky Central Life Insurance Company, and the Great Southern Life Insurance Company.<sup>39</sup>

The attitude of reinsurers. The reinsuring companies seemingly took a very casual attitude toward policies purchased. This attitude was typified during an examination which the accounting firm of Peat, Marwick, Mitchell & Co. undertook to perform on behalf of one of the reinsurers, Anderson Clayton Company. When the auditors attempted to closely examine Equity Funding's operations in order to reconcile some discrepancies, Equity Funding officials ordered them off the premises. Peat Marwick filed a report with Anderson Clayton detailing the extent of the examination of Equity Funding and the circumstances surrounding the subsequent dismissal. Anderson Clayton continued to do business with Equity Funding, and the auditor's report was not acted upon.<sup>40</sup> The insurance industry has urged members to take a closer look at those companies with which they do business and to compare them with overall industry guidelines and statistics.

Investment analysts. Investment analysts shared a deep concern as to the outcome of the Equity Funding case. Opinions as to the invest-

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<sup>38</sup>Cole, "Anatomy of an Insurance Scandal," p. 1-F, col. 3.

<sup>39</sup>Cole, "Anatomy of an Insurance Scandal," p. 1-F, col. 3.

<sup>40</sup>Cole, "Anatomy of an Insurance Scandal," p. 1-F, col. 3.

ment quality of Equity Funding had been widely divergent between various analysts and investment brokerage firms. The sharpest division occurred when conflicting rumors were spreading about Equity Funding shortly before trading was suspended. Hayden Stone, Inc. was not alone in its bullish advice on Equity Funding. A Wertheim & Company research report in July, 1972 stated that:

Equity Funding's inherently conservative approach to business may be viewed as a strong defensive weapon in the hands of a group of uncommonly able executives aggressively seeking and obtaining a growing share of the financial services market.<sup>41</sup>

This conclusion was supposedly based on an analysis of Equity's internal control, ". . . a system designed to minimize surprise."<sup>42</sup> At the same time, many analysts felt uneasy about Equity Funding as the rumors began to spread. Raymond Dirks of Delafield Childs, Inc. was largely responsible for investigating and disclosing the extent of the fraud. However, the manner in which the disclosure was made created controversy about the use of inside information. Mr. Dirks was charged with giving advance notice to larger clients so that any Equity Funding stock could be disposed of before the information was made public. The New York Stock Exchange brought disciplinary charges against Mr. Dirks because the Securities and Exchange Commission and the New York Stock Exchange were not contacted before the adverse information was relayed to clients.<sup>43</sup> The

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<sup>41</sup>Michael J. Connor, "Wall Street Analysts Give Lots of Bad Advice Along With the Good," The Wall Street Journal, May 25, 1973, p. 1, col. 6.

<sup>42</sup>Connor, p. 1, col. 6.

<sup>43</sup>Tom Goldstein, "Equity Funding Case Raises Many Legal Questions About Inside Information But Yields Few Answers." The Wall Street Journal, May 14, 1973, p. 24, col. 1.

issue hinges on the definition of inside information, and its resolution will affect the stature and duties of stock analysts. A Wall Street securities attorney regarded the Dirks case as a potential judicial classic. "The number of insider cases that have gone to final judgment is slight, but there is so much involved here that it's got to go the full route."<sup>44</sup>

Investors in Equity Funding. From a financial standpoint, the investors were the heaviest losers. From large institutions investing millions of dollars to individuals investing a portion of their life savings, holders of Equity Funding securities included a broad cross-section of the American public. Apparently the single largest block of Equity Funding common stock was held by the Fidelity Corporation of Richmond. Their 579,000 shares represented approximately seven percent of the nearly 8 million shares outstanding. Other institutional investors included Swarthmore College, Antioch College, Williams College, Amherst College, the Ford Foundation, the Ohio State Teachers Retirement System, and several other pension and retirement funds. Although the institutional investors were reluctant to disclose the exact amounts involved, potential losses of \$10.8 million by the Ohio State Teachers Retirement System and \$1 million by the Princeton Endowment Fund had been reported.<sup>45</sup>

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<sup>44</sup>Goldstein, p. 24, col. 1.

<sup>45</sup>William E. Blundell, "Many People's Dreams Came Crashing Down With Equity Funding," The Wall Street Journal, March 29, 1974, p. 25, col. 4.

The impact on small investors. Even though larger investors suffered substantial losses, the financial impact weighed more heavily on many of the individual investors. In stories too often repeated, individual investors could ill afford to lose the investments made in stocks and bonds of a company in which they had complete faith. The sheer size of the company created a sense of security, and the reassurances of the so-called "experts" did the rest. The following questions relay the reaction of one of these individuals.

Where were the men who were supposed to watch out for us little people? They tell you it's all safe, all regulated, so they can get you to invest. Then you find out it's still nothing but a big crapshoot, and you're marked for a loser. Would you ever believe an insurance company that size going bust? Aren't they supposed to be like the Rock of Gibraltar?<sup>46</sup>

The deep-seated distrust of the stock market and the entire corporate financial structure harbored by small investors was not limited to Equity Funding. The stock markets already were experiencing difficulty with attracting the smaller investors, and disclosures related to Equity Funding were expected to have long-range effects more serious than immediate dollar losses.

Employees of Equity Funding. No group of individuals suffered more from the Equity Funding scandal than the present and former employees. The vast majority were innocent of any wrong doing and continued to invest as company executives gave assurance that everything was going fine. The sense of loss and betrayal was compounded by later disclosures that

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<sup>46</sup>Blundell, "Many People's Dreams," p. 1, col. 1.

these same executives sold heavily from personal holdings while offering assurances to others.<sup>47</sup>

The public accounting profession. The effects of the Equity Funding case on the public accounting profession remained the most difficult to define. Immediate reactions and suggested changes were difficult to assess. The media press dealt extensively with the auditor's role and raised important points which the accounting profession must consider and respond to.

The long range effects and changes due to the Equity Funding fraud will depend to a great extent upon the nature of reports from the American Institute of Certified Public Accountants. At its May, 1973 meeting, the Institute's Board of Directors set up a special committee intended to meet the challenge presented by this case. The committee was charged to study currently accepted auditing standards and to determine if they should be changed as a result of the Equity Funding scandal.<sup>48</sup> The broad implications of the committee charge suggested the potential of far-reaching changes in auditing standards and practice.

#### Accounting Issues

Before recommending possible changes in current audit standards and procedures, an inquiry into specific accounting issues raised by the Equity Funding case is needed in order to examine the extent to which the standards were followed.

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<sup>47</sup>Charles J. Elia, "Many Officers Sold Equity Funding Stock Before Scandal Broke," The Wall Street Journal, April 20, 1973, p. 1, col. 6.

<sup>48</sup>The report from this committee was issued in July, 1975 and is subsequently referred to in the following section concerning the accounting issues involved in the Equity Funding case.

Inflated assets. The marketing concept of using loans on mutual funds to purchase life insurance allowed company officials a wide latitude for manipulation. An enormous list of "phonies" was created merely through the use of bookkeeping entries. They created customers that didn't exist, who bought mutual funds that didn't exist, which was used as collateral for life insurance that didn't exist, which became numbers on a computer tape, which printed out assets that didn't exist.

In the beginning, approximately 1965 through 1970, the objective of this activity was to report steadily increasing earnings over which the company had complete control. This was done to keep the price of the stock up, enabling the company to make major acquisitions in exchange for Equity Funding stock and to raise additional capital. Until 1970 the phony insurance generated only phony profits, but in 1970 the company officials began reselling insurance policies to unsuspecting outside insurance companies.

The funded loan program jumped sharply each year, at least on paper. At the end of 1965 the company listed outstanding loans at \$10.4 million; in 1966 it was \$16.5 million; in 1967 it was \$25.1 million; in 1968 it was \$36.3 million; in 1969 it was \$51.2 million; in 1970 it was \$62.3 million; and in 1971 it was \$88.6 million.<sup>49</sup> The largest increase occurred in 1972 when the balance was listed at \$117 million. The portion of these loans that Equity claimed to finance itself rose correspondingly. These figures went from \$2.2 million in 1965 to \$44.4 million in

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<sup>49</sup>Priscilla S. Meyer, "Equity Scandal Grows--Involves \$120 Million in Nonexistent Assets," The Wall Street Journal, April 24, 1973, p. 15, col. 2.

1970 and finally to \$77 million in 1972.<sup>50</sup> The \$77 million amount at the end of 1972 included \$62.3 million of fictitious funded loans receivable and a corresponding amount of fictitious collateral.<sup>51</sup>

The figures were growing so fast that company officials were unable to keep them reconciled with outside insurance companies' figures. Penn Life's prospectus in June of 1967 showed that Equity Funding had produced \$58.6 million of life insurance for them in 1966, whereas an Equity Funding prospectus claimed \$226.3 million face amount of life insurance sold in 1966--the greater part through Penn Life. "There are indications that some people noticed this discrepancy at the time but that the issue somehow quietly passed."<sup>52</sup> Discrepancies noticed but allowed to pass became an operating condition upon which company executives depended on more than one occasion.

Bookkeeping irregularities. Interspersed throughout the Equity Funding fraud are numerous examples of bookkeeping irregularities and manipulation of accounts. The general pattern of these irregularities involved the use of fictitious journal entries to record non-existent assets and income, with ". . . virtually no attempt to create supporting documentation."<sup>53</sup> Another irregularity involved the systematic misclassification of entries as income instead of liabilities.

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<sup>50</sup>Meyer, p. 15, col. 2.

<sup>51</sup>Special Committee on Equity Funding, Report of the Committee, The Adequacy of Auditing Standards and Procedures Currently Applied in the Examination of Financial Statements (New York: American Institute of Certified Public Accountants, 1975), p. 16.

<sup>52</sup>Meyer, "Equity Scandal Grows," p. 15, col. 2.

<sup>53</sup>Special Committee on Equity Funding, The Adequacy of Auditing Standards, p. 17.



In one instance the creation of fictitious sales of insurance policies by the parent company's marketing subsidiary, Equity Funding Corporation of California, was recorded as an increase to the funded loans receivable and commission income, but there was no corresponding increase in the commission expense accounts. Instead, ". . . other expenses were apparently reclassified as commission expense when data for the various entities were consolidated, so that consolidated statements reflected the expected relationship."<sup>54</sup> Commissions on renewals of Equity Funding Life Insurance Company policies were also recorded as commission income by Equity Funding of California, instead of payables to Equity Life. To the extent that these commissions were computed on fictitious insurance policies they represented an overstatement of income and assets, and an understatement of liabilities.

The fictitious transactions involving the mutual fund/life insurance plan resulted in complementary intercompany receivables and payables which were cleared through the parent company, Equity Funding Corporation of America. However, the balances in the intercompany accounts were not equal and thus were not offsetting. To balance the transfers ". . . a series of fictitious purchases and sales of commercial paper and bonds was recorded. . . ."<sup>55</sup> These fictitious investments were backed up by fictitious brokerage advices which supposedly indicated that the securities were being held at a commercial bank.

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<sup>54</sup>Special Committee on Equity Funding, p. 18.

<sup>55</sup>Special Committee on Equity Funding, p. 23.

### Responsibility for Detecting Fraud

Two views on the Equity Funding fraud. The degree of responsibility of the outside auditors to detect and disclose the Equity Funding fraud may be looked at from two different viewpoints. The first approach to determining the auditors' responsibility argues that routine audit procedures aren't designed to detect fraud, particularly where there is widespread collusion by top management. The second approach agrees with this premise, but says that a massive fraud of this nature should have been uncovered through routine procedures.

Routine audit not designed to detect fraud. The argument that a routine audit is not designed to detect fraud, particularly where top management is involved, is the basic approach taken by the accounting profession and the American Institute of Certified Public Accountants. The Institute states that in making his examination the auditor must always be aware that fraud may exist and, if it does exist, might materially affect the financial statements and his opinion on those statements.<sup>56</sup>

However, the ordinary examination directed to the expression of an opinion on financial statements is not primarily or specifically designed, and cannot be relied upon, to disclose defalcations . . . although their discovery may result. . . . The responsibility of the independent auditor for failure to detect fraud . . . arises only when such failure clearly results from failure to comply with generally accepted auditing standards.<sup>57</sup>

There are several valid reasons for this limitation on auditors' responsibilities arising from the audit examination. One reason is that

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<sup>56</sup>Special Committee on Equity Funding, p. 2.

<sup>57</sup>Special Committee on Equity Funding, p. 2-3.

the auditor's unqualified opinion is an expression of reasonableness and fairness, but not of absolute assurance. This limitation arises because of the economic infeasibility of examining every transaction and every document relating to every transaction. Even if the auditor could feasibly include this degree of detailed work in his examination there is no absolute assurance that fraud would be detected.

Three other types of fraudulent activity which a detailed examination would not necessarily detect are: forgery, collusion, and unrecorded transactions. All three of these items are discussed by the Institute's Committee on Equity Funding because of their relevance to the fraudulent aspects of that case.<sup>58</sup> Auditors cannot reasonably be expected to detect forged documents, particularly when combined with widespread collusion among client personnel, unless other aspects of the audit examination create some doubt as to the authenticity of these documents. Unrecorded transactions represent yet another type of fraud that may not be detected in the audit examination involving normal testing procedures.

Therefore, even in audit examinations involving a large amount of detailed testing,

. . . some types of fraud may escape detection . . . because there is necessarily a point where the auditor's inquiry stops.

In every audit, the auditor is expected to be aware of the possibility of fraud. Nevertheless, there must come a point where, unless he has reason for suspicion, the auditor accepts the truth of representations made to him and the genuineness of documents which he inspects.<sup>59</sup>

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<sup>58</sup>Special Committee on Equity Funding, p. 36.

<sup>59</sup>Special Committee on Equity Funding, p. 37.

Routine procedures should detect massive fraud. The second approach to the detection of fraud by auditors argues that a massive fraud of the nature of Equity Funding should have been uncovered through routine audit procedures. This premise does not contradict the position held by the Institute, but it does focus on a very important characteristic of the Equity Funding case. The fraudulent activities carried out at Equity Funding Corporation and selected subsidiaries involved active and passive collusion by a large number of company personnel, including many people at the top management level of the organization.

A "massive fraud" does not necessarily entail a "management fraud", even though both characteristics were present in the Equity Funding case. The Institute's Committee on Equity Funding recognized that the increased magnitude of fraudulent activities does not always increase the probability of detection by outside auditors. They did concede that there is a greater potential for discovery of a fraud as the number of accounts and records, company personnel, and length of time involved increased. However, the skillfulness of the collusion may reduce the possibility of detection, regardless of the size of the fraud, and offset an increased probability of discovery brought about by "massiveness" in terms of size or number of accounts and personnel involved.

It may fairly be said that the more massive the fraud the more likely it is to be detected in a conventional audit; nonetheless there is no definable degree of massiveness as to whether such an audit can invariably be relied upon for such detection. Nor, in the committee's view, is there any practicable means of altering auditing standards or procedures so as to provide an absolute assurance with respect to any set degree of massiveness.<sup>60</sup>

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<sup>60</sup>Special Committee on Equity Funding, p. 39.

Management fraud. Another pertinent aspect of the Equity Funding case is that it could be characterized as a "management fraud." The active participation in fraudulent activities by top management, with corresponding collusion by various other company employees, poses a much more fundamental problem for outside auditors. Management is responsible for the safeguarding of corporate assets, including the establishment of an appropriate accounting system and the preparation of financial statements.

The auditor, on the other hand has no such management and control responsibility. His knowledge of the company's financial affairs is obtained second hand through his examination of the financial statements prepared by management. The auditor does not participate in management's decisions or in the initial recording of transactions.<sup>61</sup>

Internal control evaluation is crucial. The reliability of this "second hand knowledge" about the client's operations depends heavily upon the effectiveness of the internal control system. If the financial information prepared by client management is fictitious, and is assisted by an accounting system designed to conceal the fraud from the auditors, then virtually any system of internal control will be rendered ineffective.

The auditor's task, therefore, is to evaluate the internal control system's reliability so that he can properly extend his audit examination if the results of his evaluation indicate that additional or alternate procedures are required. The internal control evaluation would not necessarily reveal a fraud, but particularly in the Equity Funding case,

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<sup>61</sup>Harvey Kapnick, "Management Fraud and the Independent Auditor," Arthur Anderson & Co. Executive News Briefs, June, 1975, p. 2.

it would disclose weaknesses in the internal accounting and administrative controls which should raise concern about the reliability of the accounting records.<sup>62</sup>

The "early warning system" provided by the auditor's study and evaluation system is important in all audit examinations, particularly in accounting systems where a large volume of accounting records and data processing restricts the proportion of client transactions tested and traced to the records in the audit examination. In effect, the detailed transactions testing is replaced by an increased dependence on the accounting system to produce reliable financial records.

The importance of internal control increases dramatically as one moves from manual accounting systems to computer-based systems. "Once you've opened a window into a computer system . . . it's there permanently and . . . a virtually unlimited amount of money can be taken without any increase in the danger of being detected."<sup>63</sup> The auditor's failure to adequately analyze the Equity Funding operations in order to select and coordinate subsequent procedures was amplified by the large financial consequences of the fraud.

#### Adherence to Audit Standards

In order to facilitate the subsequent discussion of the auditor's adherence, or lack of adherence, to the general audit standards and standards of field work these standards are restated in this section.

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<sup>62</sup>Special Committee on Equity Funding, The Adequacy of Auditing Standards, p. 27.

<sup>63</sup>N. R. Kleinfield, "Crooks and Computers Are an Effective Team, Business World Learns," The Wall Street Journal, April 26, 1973, p. 1, col. 6.

General Standards:

1. The examination is to be performed by a person or persons having adequate technical training and proficiency as an auditor.
2. In all matters relating to the assignment, an independence in mental attitude is to be maintained by the auditor or auditors.
3. Due professional care is to be exercised in the performance of the examination and the preparation of the report.

Standards of Field Work:

1. The work is to be adequately planned and assistants, if any, are to be properly supervised.
2. There is to be a proper study and evaluation of the existing internal control as a basis for reliance thereon and for the determination of the resultant extent of the tests to which auditing procedures are to be restricted.
3. Sufficient competent evidential matter is to be obtained through inspection, observation, inquiries, and confirmations to afford a reasonable basis for an opinion regarding the financial statements under examination.<sup>64</sup>

Adequate training and proficiency of the auditor. The central accounting figure in this case is Solomon Block, who was the audit manager of the Equity Funding account for four years preceding the collapse. Mr. Block did not become a certified public accountant until April, 1973, which was after the fraud was discovered. He worked for Wolfson, Weiner, Ratoff & Lapin, a public accounting firm with offices in Beverly Hills and New York. Wolfson Weiner, auditors for Equity Funding even before they went public, merged with the national firm of Seidman & Seidman who took over the audit responsibilities of Equity Funding. Other firms had audited certain Equity Funding subsidiaries, notably Equity Funding Life Insurance Company by Haskins & Sells from 1968 through 1971.

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<sup>64</sup>American Institute of Certified Public Accountants, Statement on Auditing Standards: Codification of Auditing Standards and Procedures No. 1 (New York: American Institute of Certified Public Accountants, 1973), p. 5.

After the Wolfson Weiner merger with Seidman & Seidman the national firm was retained for the audit of the parent company and all subsidiaries. However, the same Wolfson Weiner personnel continued to perform the examination.<sup>65</sup> There was, in effect, no change of auditors due to the merger. It is unusual in public accounting practice for a man who is not a certified public accountant to be in charge of an audit the size of Equity Funding. Seidman & Seidman reportedly wanted to pull Solomon Block off the audit when they merged with Wolfson Weiner because he was not a CPA, but the firm was persuaded not to do so by Equity Funding executives.<sup>66</sup> In fact, the merger agreement between Seidman & Seidman and Wolfson Weiner may have been finalized with the understanding that the same audit personnel would be retained on the Equity Funding account.<sup>67</sup>

Independence of the auditor. There is considerable doubt that the outsider auditors were truly independent in either fact or appearance.

At Equity Funding, Mr. Block gave no particular appearance of independence. His name was included in Equity Funding's company phone directory, with no notation to indicate he was an outsider. Similarly, there was no such notation on the door to his office (in the Equity Building). People who vaguely knew him considered him an Equity Funding employee.<sup>68</sup>

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<sup>65</sup>Raymond L. Dirks and Leonard Gross, "How the New York Stock Exchange, the Life Insurance Industry, the SEC and a Host of Other Guardians of the Public Weal Allowed the American Public to be Swindled Out of \$400,000,000," Playboy, May, 1974, p. 146.

<sup>66</sup>Frederick Andrews, "Why Didn't Auditors Find Something Wrong With Equity Funding?" The Wall Street Journal, May 4, 1974, p. 1, col. 6.

<sup>67</sup>Dirks and Gross, "How the New York Stock Exchange," p. 146.

<sup>68</sup>Andrews, "Why Didn't Auditors Find," p. 21, col. 3.



Even the factual independence of the auditors can be questioned if one accepts the report in which the audit partner, Julian Weiner, claimed that the basic Equity Funding concept was devised by he and Mike Riordan.<sup>69</sup> Another possible source of pressure on Wolfson, Weiner, Ratoff & Lapin was that the Equity Funding account represented almost 60% of the firm's billings, and became its main selling point in merger talks with national accounting firms.

The inability (or unwillingness, if the convictions are subsequently upheld in the appeal process) of the auditors to carry out an "arm's length" audit examination greatly diminished any aspect of true independence. The auditor-client relationship requires a thorough understanding and acceptance of the responsibilities of each party, particularly with respect to the independence of the auditor. The information produced thus far indicates that the auditors involved did not accept nor project their independence in fact or appearance.

Such a failure violates the general audit standard requiring independence, and also adversely affects the possibility of adherence to other audit standards. The auditor's ability to retain his independence throughout the examination is a fundamental characteristic affecting all other generally accepted audit standards. This personal characteristic strongly affects the effectiveness with which the field work is planned and carried out.

Evidential matter and asset confirmation. One attempt by the Equity Funding auditors to confirm the existence of claimed assets involved \$25

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<sup>69</sup>Andrews, p. 1, col. 6.

million in fictitious bonds created to balance intercompany transfers. These bonds were supposedly being held for Equity Funding by American National Bank & Trust in Chicago. As it turned out the bonds were never there. Seidman & Seidman mailed a routine bank confirmation, dated December 31, 1972, to the Chicago bank. American National says it received the form and returned it on January 9, 1973, confirming that Equity Funding did have accounts and the size of the balances in those accounts. But a bank spokesman said ". . . since we weren't holding any securities for them, we couldn't confirm them (the securities)."<sup>70</sup> This means that the bank returned a confirmation form showing \$25 million less than Seidman & Seidman expected it to show.

A separate letter signed by an Equity Funding officer was supposedly sent to the bank asking them to confirm to Seidman & Seidman a detailed list of these securities. The returned letter confirmed the securities and was signed by Joseph S. Phillips, who identified himself as a second vice president of American National Bank. "No one at the bank has even heard of him."<sup>71</sup> Instead of sending this confirmation letter to American National Bank & Trust in Chicago, it had actually been mailed to a phony company called "American National Trust." An officer of Equity Funding flew to Chicago, signed the request with the phony name, and returned it to the auditors in Los Angeles.<sup>72</sup>

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<sup>70</sup>Andrews, p. 21, col. 3.

<sup>71</sup>Andrews, p. 21, col. 3.

<sup>72</sup>Special Committee on Equity Funding, The Adequacy of Standards, p. 32.

In another situation, auditors performing an examination for an outside insurance company that reinsured Equity policies allowed company officials to clear up negative confirmations that were received by the auditors by telephoning colleagues, who would then confirm the policies over the speaker telephone.<sup>73</sup> At all levels of the audit there is the implication that ". . . if questions were raised in the work sheets they wouldn't get answered. The auditors would get a nonsensical answer, a non-answer, and let them go."<sup>74</sup>

Computer-assisted fraud. One factor that might have contributed to the apparent inability of the auditors to detect the fraud was the sophistication of the fraud scheme. Forged documents and fictitious records were supplemented by a computer-based accounting system which was specifically designed to cover up the fraudulent activity and deceive the outside auditors.

Equity Funding executives and company employees utilized computer programs to systematically create false documents and computer printouts of accounting records. Each mutual fund/insurance policy package was identified with a five digit number. The fraudulently inflated list of policies simply repeated the valid policy numbers at regular intervals throughout the printout. So that nothing would appear suspicious about the repeated numbers, internally referred to as Department 99 business, the first two digits of the identification number were left off.

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<sup>73</sup>Wyndham Robertson, "Those Daring Young Con Men of Equity Funding," Fortune, August, 1973, p. 132.

<sup>74</sup>Robertson, p. 132.

When the auditors selected a list of policyholders for confirmation the sample would be given to an Equity Funding employee. The employee then ran it through the computer, using a specially designed company program which retrieved the actual names and addresses while identifying the duplicates. For the duplicates the Equity employees substituted names and addresses of friends and employees who could be persuaded to send back confirmations.<sup>75</sup>

The problem of creating customer files to back up the computer listing was handled through all night "fraud parties." At these meetings company officials would prepare hard copy records, including forged medical records and birth certificates, to match the printouts.<sup>76</sup> When the auditors asked to see a file which did not exist they were told that it was unavailable, but would be turned over the next day. That night a fraudulent file would be prepared.

In accumulating audit evidence the auditors relied on those records, and other accounting data including computer printouts, that company officials chose to give them. "The company made it look valid, and the auditors believed the computer."<sup>77</sup> In such an atmosphere the auditors merely compiled the information as it was given to them, rather than analyzing its audit significance. Equity's computer room personnel claim that the auditors seldom talked to them, and did not attempt to run their own test tapes or sample selections.<sup>78</sup> Even when the auditors attempted

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<sup>75</sup>Robertson, p. 132.

<sup>76</sup>"Conning By Computer," Newsweek, April 23, 1973, p. 23.

<sup>77</sup>"Conning By Computer," p. 93.

<sup>78</sup>Andrews, "Why Didn't Auditors Find," p. 21, col. 3.

to use traditional procedures such as bank confirmations, mailed confirmations to policyholders, and physical examination of policyholder files the results were fraudulent and invalid.

The willingness of auditors to accept computer printouts that contained only the last three digits of a five digit identification number, and hardcopy insurance files that were unavailable until the following day emphasizes the unrealistic reliance which the auditors placed on any information which the company personnel provided. This acceptance of incomplete information may have been due to some extent to the "window dressing" effect which a computer-based accounting system provided. Such an effect was understandable fifteen or twenty years ago when EDP systems were first being developed for business use. However, employees in Equity Funding's computer facility said that "Solomon Block showed interest in the computer room only once, when he said he wanted to bring in a 'computer type' to learn the operation, but Equity Funding rejected the idea."<sup>79</sup>

The Institute's Committee on Equity Funding concluded in its report that the ". . . computer was an important factor in carrying out measures to conceal the fraud, but was not essential to the commission of the basic fraudulent acts."<sup>80</sup> The computer was primarily used to manipulate data stored in the accounting system files and to create a superficially impressive array of supportive detail for the fraudulent activity.

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<sup>79</sup>Andrews, p. 21, col. 3.

<sup>80</sup>Special Committee on Equity Funding, The Adequacy of Standards, p. 25.

Even the supportive role provided by the computer in the Equity Funding fraud was ". . . not based on a sophisticated application of data processing technology."<sup>81</sup> Instead, the Committee stressed the routine nature of the manipulation involved and concluded that no new auditing standards or procedures are needed in regard to computer maintained financial records.<sup>82</sup>

Committee conclusions on adequacy of audit standards and procedures.

The traditional approach of the Institute that a routine audit is not designed to detect fraud does not conflict with the argument that the Equity Funding fraud should have been detected by the auditors. The basic assumption of the first approach is that the routine audit must be conducted according to generally accepted auditing standards, and using customary auditing procedures. If such routine procedures raise the auditor's concern about certain aspects of the examination, he must then utilize extended audit procedures where required.

The Committee on Equity Funding stated that

. . . customary audit procedures properly applied would have provided a reasonable degree of assurance that the existence of fraud at Equity Funding would be detected. . . . and . . . in such circumstances customary procedures would be extended because of the internal control weakness, thereby enhancing the likelihood of detecting fraud.<sup>83</sup>

This statement supports the Committee's general conclusion concerning the Equity Funding case, that ". . . generally accepted auditing

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<sup>81</sup>Special Committee on Equity Funding, p. 25.

<sup>82</sup>Special Committee on Equity Funding, p. 34.

<sup>83</sup>Special Committee on Equity Funding, p. 27.

standards are adequate and that no changes are called for in the procedures commonly used by auditors."<sup>84</sup>

#### Summary

The disclosures from the massive management-perpetrated fraud involving the Equity Funding Corporation pose a number of very serious questions for a variety of our business institutions and practices. These include the regulation of insurance companies, the role of financial analysts in regard to "insider" information, and the capacity of the independent auditor to meaningfully perform the attest function for corporate financial statements in an increasingly complex business environment.

Equity Funding soon became a favorite of Wall Street investors, and the price of its stock increased rapidly. An expansion program financed through Equity stock brought in many subsidiary companies, and created the foundation for an emerging financial empire. It seemed to outsiders that Equity executives could make no mistakes in their policies and business decisions.

However, the glamorous outer shell could not solve the persistent problem of cash shortages in meeting operating expenses. These cash problems and a desire to keep stock prices up led to an enormous web of systematically fraudulent activities. At first fictitious accounting data was included only in the financial statement in order to boost stock prices. Starting in 1970 fictitious policy holders were created and reinsured with other insurance companies. Although this activity

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<sup>84</sup>Special Committee on Equity Funding, p. 27.

brought in cash, it also constituted an ever larger drain of cash. The company had to raise cash to pay the premiums on some of the policies so that they would not lapse prematurely and create suspicion. A continuous cycle began as larger and larger amounts of fictitious insurance were sold to unsuspecting companies. When this fraudulent activity was disclosed by a former Equity employee, the company's stock price began to fall rapidly until March 27, 1973, when trading was suspended by the New York Stock Exchange.

Subsequent investigation by insurance regulatory authorities, and federal and local grand juries resulted in numerous indictments. These charges were made against upper level executives formerly with Equity, and against two of the people involved in auditing the company. Federal court action placed Equity Funding under Chapter 10 of the Federal Bankruptcy Act, naming Robert Loeffler as trustee. A fraud audit performed by Touche Ross & Co. stated that the company was worth about \$185 million less than it had claimed in 1972 financial statements.

Parties primarily affected, financially and otherwise, include policyholders, the insurance industry, securities analysts, investors, and certified public accountants. Valid policyholders of Equity Funding insurance programs will apparently not be adversely affected as reorganization plans include provisions to transfer these policies to stable insurance company subsidiaries. Insurance industry parties have come under heavy criticism, and new restrictions are a virtual certainty, particularly with regard to reinsurance procedures.

Conflicting analysts' reports as to the financial condition of Equity Funding raised many questions as to the usefulness of such analysis



for investment decisions. Investors in Equity lost both their financial investment and their faith in the regulatory system that was supposedly protecting them. The effect of this loss on investment psychology can only be determined in the long run reactions on Wall Street.

The effects of the fraud on the public accounting profession are much less defined than for the other parties. Legal action against Marvin Lichtig, Solomon Block, and Julius Weiner, representing the accounting firm of Wolfson, Weiner, Ratoff & Lapin and then Seidman & Seidman, resulted in convictions that they knowingly included false accounting information in financial statements filed with the Securities and Exchange Commission. Regardless of the final outcome of the charges there involves a certain loss of stature for independent auditors unless the public accounting profession is able to determine what action needs to be taken.

The Institute created a Special Committee to study the Equity Funding case and to determine whether current auditing standards should be changed or amended. The Committee found that the accounting aspects of the case primarily involved inflated assets and bookkeeping irregularities. Their basic conclusion was that customary audit procedures, if they had been properly applied, would have detected the fraud. Furthermore, the Special Committee on Equity Funding concluded that generally accepted auditing standards are adequate and no changes are needed in commonly used auditing procedures.

However, from the research data available, there appears to be no basis for determining the adequacy or inadequacy of auditing standards based on the Equity Funding case because the standards were not adhered

to by the auditors. If the auditors had adhered to all of the standards and had still carried out an unsatisfactory audit examination one could then examine possible inadequacies inherent in the standards. In this case it is apparent that the auditors did not adhere to these standards. The cause of this inadherence, whether negligence or criminal fraud, can only be answered after the process of legal appeal has been completed. However, conclusive statements about the adequacy of standards assume a satisfactory attempt to adhere to those standards, and this prerequisite was absent in the Equity Funding case.

The lesson is clear: No matter how efficacious a prescribed body of audit standards and procedures may be when they are employed in a properly conducted audit, the auditors must adhere to them if they are to be effective.

The implications of the Equity Funding case extend to other independent auditors of financial statements in similar situations. These implications are related to specific circumstances where the personal and professional attributes of the Equity Funding auditors contributed to inadequate adherence to required audit standards and procedures. In Chapter V selected characteristics of professional performance by CPA firms were reviewed from data obtained by a mailed questionnaire survey. Analysis of this information, together with additional analysis presented in Chapter VI and the findings of Chapter IV, were used to develop the recommendations presented in Chapter VII.

## CHAPTER V

### SURVEY OF SELECTED ASPECTS OF CPA FIRM PRACTICES RELATING TO AUDITS OF COMPUTER-BASED ACCOUNTING SYSTEMS

#### Survey Objective

The Equity Funding situation presents significant implications for the public accounting profession, especially in relation to audits of computer-based accounting systems. In the Equity Funding case certain inadequacies in personal and professional performance apparently contributed to a substandard audit examination. However, before concluding as to the sufficiency of audit standards and before recommending changes in audit practice, CPA firms were surveyed to determine whether present attitudes and practices were consistent with the audit performance in the Equity Funding case.

This chapter details the survey and explains the implications of responses to the questionnaire. A more comprehensive analysis is presented in Chapter VI.

#### Survey Description

A questionnaire was mailed to a random sample of 500 certified public accounting firms and individual practitioners in the United States. All sample elements are members of the American Institute of Certified Public Accountants, and the mailing list was selected from Accounting Firms and Practitioners which contains member firms by state and city.<sup>1</sup>

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<sup>1</sup>American Institute of Certified Public Accountants, Accounting Firms and Practitioners: 1971 (New York: American Institute of Certified Public Accountants, 1972).

There were 141 usable responses to the questionnaire, and frequency distributions have been prepared for each question and for the analytical portion of the study. No statistical inferences were made from the results of the sample as to the total population of public accounting firms and practitioners. Comparisons, observations, and conclusions were based on the frequency distribution tables prepared from the sample responses received.

### Design of the Questionnaire

The questions generally required scaled responses in order to obtain the desired expressions of degree, although binary responses and open-end questions were used where appropriate.<sup>2</sup> Twenty-six questions covered eight basic areas:

1. Characteristics of respondents
2. Training methods utilized
3. Policies and attitudes regarding selected computer-related areas
4. Degree of involvement with computer-based accounting systems
5. Use of computer audit specialists
6. Depth of knowledge required in selected computer-based areas
7. Study and evaluation of internal control
8. Reaction to the Equity Funding case

Frequency distribution tables for each question and area form the bulk of this chapter.

Characteristics of respondents. Questions 1 through 4 relate to various characteristics of those firms and individual practitioners who responded to the survey. Question 1 requested a classification of

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<sup>2</sup>The questionnaire and cover letter used in this survey are included in Appendix B.

firm activities according to the size of geographical area served. The area classifications included international, national, regional, and local, and as expected, local firms account for the majority of responses (see Table 1).

TABLE 1  
SIZE OF GEOGRAPHICAL AREA SERVED

	Number	Percent
Local	111	79%
Regional	15	11
National	3	2
International	<u>12</u>	<u>8*</u>
Total	141	100%

\*8.5% rounded down

Questions 2 and 3 dealt with firm size as classified by annual revenues (see Table 2) and the size of the professional audit staff and partners (see Table 3). The majority of firms indicated annual revenue ranges between \$100,000 and \$499,999 and an audit staff numbering from two to nine members.

In Question 4 the respondents were asked to classify the total firm revenue according to the percentage derived from auditing, taxation, management services, write-up work and unaudited statements, and other activities (see Table 4). Audit services comprised 25 percent or less of annual revenues in almost half of the firms and 50 percent or less in over four-fifths of the firms.

Training methods utilized. Various courses and methods were used to train professional staff to audit financial statements prepared in a computer-based accounting system. The range of instruction in

TABLE 2  
AMOUNT OF ANNUAL REVENUE

	Number	Percent
Under \$100,000	30	21%
\$100,000 - \$499,999	78	55
\$500,000 - \$999,999	12	9
\$1,000,000 - \$4,999,999	5	3
\$5,000,000 - \$15,000,000	4	3
Over \$15,000,000	<u>12</u>	<u>9</u>
Total	141	100%

TABLE 3  
SIZE OF PROFESSIONAL AUDIT STAFF

	Number	Percent
Sole Practitioner	14	10%
2 - 9	78	55
10 - 24	24	17
25 - 99	9	6
100 - 500	4	3
Over 500	<u>12</u>	<u>9</u>
Total	141	100%

TABLE 4  
CLASSIFICATION OF ANNUAL REVENUE BY SOURCE

	Percentage of Revenue					
	0	1 - 25	26 - 50	51 - 75	76 - 99	100
Auditing (n = 141)	2%	47%	33%	16%	2%	0%
Taxes	2	45	48	3	2	0
Management Services	27	63	8	1	1	0
Write-Up Work and Unaudited Statements	11	55	23	10	1	0

Question 5 included firm-wide courses, courses given by professional societies, courses given by equipment companies, college courses, on the job training, and self-study courses. The most popular choices among the respondents included courses given by professional societies and on the job training, while the least popular were firm-wide courses and college courses given during degree work (see Table 5).

Firm policies and attitudes. Questions 6 through 18 were concerned with the firm policies and attitudes toward the knowledge level required of each member of the audit staff in selected computer-related areas. These questions were divided into two categories. Questions 6 through 11 contain some of the recommendations made in a 1967 study co-sponsored by the Carnegie Corporation and the American Institute of Certified Public Accountants.<sup>3</sup> The authors of this study concluded that a "common body of knowledge," based upon both academic and empirical research, would be necessary for all beginning certified public accountants.

Our concern with the CPA's obligation to review the system of internal control, with his need to modify his auditing methods to conform to computerized systems, and with his increasing activity in management services prompts us to make the following recommendations for inclusion in the common body of knowledge. . . .<sup>4</sup>

Specific recommendations included knowledge of at least one computer system and component parts; flowcharting techniques; at least one programming language; and systems design, installation, debugging, and testing. Individual statements covering these points were prepared, and

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<sup>3</sup>Robert H. Roy and James H. MacNeill, Horizons for a Profession (New York: American Institute of Certified Public Accountants, 1967), p. 213.

<sup>4</sup>Roy and MacNeill, p. 213.



TABLE 5  
TRAINING METHODS UTILIZED

	Frequently Used	Occasionally Used	Never Used	No Response
Courses given by the firm (n = 141)	10%	19%	51%	20%
Courses given by professional societies (AICPA, state societies, etc.)	31	46	11	12
Courses given by equipment manufacturers and software companies	3	46	33	18
Courses (other than those leading to a degree) given by colleges and other schools	2	29	48	21
Courses given by colleges during degree work	5	16	56	23
On the job training	47	26	15	12
Individual self-study and programmed learning courses	17	46	21	16

the respondents were asked to state their firm's position of agreement or disagreement with each statement (see Table 6). Responding firms generally agreed with the recommendations of the Roy and MacNeill study except for the statements covering systems work. The firms indicated little interest in the need for auditors to be able to design, program, debug, and test a system. One possible explanation for this response was that Roy and MacNeill used the term "beginning CPA" while this study substituted "auditor" in the statements. Therefore, many of the respondents may have felt that systems work was outside of the realm of the auditor as used in the questionnaire.

Questions 12 through 18 related to basic attitudes concerning the impact of computers on the audit function, and internal control in a computer-based accounting system. The statements cover audit objectives, procedures, training, system design versus auditing, and the impact of generalized audit packages. The pattern of responses for these statements was substantially less definitive than for the Roy and MacNeill recommendations (see Table 7). However, the responding firms apparently agreed that a greater knowledge of computers was required to design a computer-based accounting system than to audit such a system.

Involvement with computers. Questions 19 and 20 were intended to ascertain the degree of involvement of the respondents with computers and computer-based accounting systems. Less than half of the firms designed systems (see Table 8), but three-fourths of the respondents indicated that they had audit clients utilizing computer systems to produce financial statements (see Table 9). The remainder of the survey questions were directed to practitioners with audit clients utilizing

TABLE 6

## 'THE COMMON BODY OF KNOWLEDGE' REQUIRED BY AUDITORS

	Strongly Disagree	Disagree More Than Agree	Agree More Than Disagree	Strongly Agree	Undecided	Don't Know Firm Policy	No Response
The auditor should have a basic knowledge of at least one computer hardware system, including the functions of its component parts, capabilities and limitations, and the more universal terms used within the system. (n=141)	4%	8%	42%	25%	6%	4%	11%
The auditor should have a working knowledge of at least one computer programming language.	11	22	31	13	9	3	11
The auditor should be able to understand the procedural steps in a computer-based accounting system of modest complexity.	1	3	35	23	8	3	11
The auditor should be able to utilize basic diagram symbols to describe the system clearly and precisely.	6	15	35	23	7	3	11
The auditor should be able to design, program, and debug a computer-based accounting system of modest complexity.	29	36	11	5	6	2	11
The auditor should be able to test a computer-based accounting system of modest complexity for compliance with design specifications.	14	20	35	13	5	2	11

TABLE 7

## THE IMPACT OF COMPUTERS ON THE AUDIT ENVIRONMENT

	Strongly Disagree	Disagree More Than Agree	Agree More Than Disagree	Strongly Agree	Undecided	Don't Know Firm Policy	No Response
Computers have had a substantial impact on changing the objectives of the audit function. (n=141)	28%	23%	23%	13%	1%	1%	11%
Computers have had a substantial impact on changes in our firm's audit procedures.	15	25	28	13	5	1	13
Computers have had a substantial impact on changes in our training of the firm's audit staff.	12	30	20	16	6	1	15
The design of computer-based accounting systems requires a greater fundamental knowledge of computers than is required to perform audits of these systems.	6	7	31	35	6	2	13
Introduction of generalized audit software packages designed to assist the auditor in a computer-based accounting system has substantially reduced the need to understand computer programming languages.	9	12	36	11	16	3	13
Introduction of generalized audit software packages has substantially improved the ability of the auditor to properly evaluate internal control in a computer-based accounting system.	6	13	38	11	16	3	13

TABLE 7 (CONTINUED)

	Strongly Disagree	Disagree More Than Agree	Agree More Than Disagree	Strongly Agree	Undecided	Don't Know Firm Policy	No Response
Introduction of generalized audit software packages has substantially reduced the need to evaluate each data processing step utilized in preparation of accounting information for financial statements. (n=141)	10%	28%	23%	6%	17%	3%	13%

computers. Only those 105 respondents that answered "yes" to Question 20 were asked to complete the remainder of the questionnaire.

TABLE 8  
DESIGN OF COMPUTER-BASED ACCOUNTING SYSTEMS

	Yes		No	
	Number	Percent	Number	Percent
Does your firm design or help design computer-based accounting systems? (n=141)	58	41%	83	59%

TABLE 9  
AUDITING IN A COMPUTER-BASED ACCOUNTING SYSTEM

	Yes		No	
	Number	Percent	Number	Percent
Does your firm have audit clients who are utilizing computer-based accounting systems? (n=141)	105	75%	36	25%

Computer audit specialists. In Question 11 each respondent was asked whether certain auditors were designated as computer audit specialists and if these specialists were assigned to all applicable audits (see Table 10). A majority of firms apparently made no designation of computer

TABLE 10

## DESIGNATION OF COMPUTER AUDIT SPECIALISTS

	Yes		No		No Response	
	Number	Percent	Number	Percent	Number	Percent
Does your firm designate certain personnel as computer audit specialists? (n=105)	37	35%	64	61%	4	4%
If "Yes," does each audit involving a computer-based accounting system have a specialist assigned? (n=37)	30	81%	6	16%	1	3%

audit specialists, but those firms with specialists assigned them to audits involving computer based systems.

Knowledge of computer-related areas. In selected technical areas, certain knowledge levels were prerequisite to the assignment of an auditor to a computer-based system. This information was similar to the information contained in Roy and MacNeill's recommendations for a common body of knowledge. However, in Question 22 the point of inquiry was the specific degree of knowledge required rather than acceptance or rejection of a given position. In addition, several computer skill areas were reviewed (Table 11).

For the most part responding firms indicated a need for a rather basic competency level in most of the technical computer areas. Data processing concepts, internal controls, and auditing were the only areas identified as needing higher proficiency levels. Furthermore, these three areas were the only selections with significant response favoring in-depth knowledge as a requirement for the auditor of a computer-based system.

Study and evaluation of internal control. Selected aspects of the auditor's study and evaluation of internal control were included in the survey. The respondent was asked to compare a computer-based accounting system with a manual system to evaluate the relative change in audit time devoted to internal control. Many of the firms required more time to study internal control, but about one-third indicated no change in internal control review as a result of computer-based accounting systems (see Table 12). The retention and form of stored records under Internal Revenue Service regulations was included as a review topic in the ques-



TABLE 11

## KNOWLEDGE REQUIRED IN SELECTED COMPUTER-RELATED AREAS

	No Knowledge Required	Elementary Understanding	Moderate Competency	In-Depth Knowledge	No Response
Basic data processing concepts (n=105)	8%	26%	46%	17%	3%
On line - real time data processing concepts	21	38	29	6	6
Computer hardware and related capabilities/ limitations	19	41	30	3	7
Programming languages	39	34	18	2	7
Program flowcharting	23	33	35	3	6
System feasibility and design	23	44	25	3	5
System flowcharting	16	35	35	7	7
Report design in a computer-based system	24	40	22	6	8
System and program documentation	14	37	36	6	7
Internal control in a computer-based system	8	18	47	21	6
Auditing in a computer-based system	7	22	42	21	8

TABLE 12

## RELATIVE CHANGE IN AUDIT TIME DEVOTED TO INTERNAL CONTROL

	More Time Required	Less Time Required	No Change	No Response
In relation to the total time devoted to an audit engagement, what has been the direction of change with respect to the time devoted to the study and evaluation of internal control in those clients utilizing computer systems? (n=105)	51%	13%	32%	4%

TABLE 13

## COMPLIANCE WITH INTERNAL REVENUE SERVICE REQUIREMENTS AS PART OF THE STUDY OF INTERNAL CONTROL

	Yes	No	No Response
Does your firm's study and evaluation of internal control in a computer-based accounting system involve the evaluation of compliance with Internal Revenue Service requirements and rulings concerning the retention of records stored on machine-sensible data media? (n=105)	48%	48%	4%

tionnaire. The responding firms were evenly split between those requiring a records compliance review and those that do not (see Table 13).

Each respondent was asked to indicate the level of utilization of selected procedures and techniques for the study and evaluation of internal control. The procedures and techniques involved were previously discussed in Chapter III as pertinent to computer-based accounting systems and included questionnaires, written narratives, flowcharts, test decks, integrated test facilities, generalized audit packages, and other software (see Table 14). The only procedure required by a majority of the firms was a standard questionnaire for all audit engagements. Many of the procedures and techniques, such as system flowcharts and program flowcharts, were considered optional. Written descriptions of the accounting system and program test decks were also regarded as optional by a number of firms. Many of the firms did not use integrated test facilities in any audit situations.

Reaction to the Equity Funding case. When this survey was made, most of the information available about the Equity Funding case was tentative and no official pronouncements had been issued by authoritative professional accounting organizations. The inquiry about the Equity Funding situation was included to obtain practitioner reactions as an indication of the perceived significance of like cases to the respondents practice. The largest response came from informal discussions between firm personnel. Almost one-fourth of the firms chose to delay any specific course of action until final outcome of the litigation. Very few of the respondents had already implemented formal changes as a result of the case (see Table 15).

TABLE 14

## SELECTED PROCEDURES AND TECHNIQUES USED TO STUDY INTERNAL CONTROL

	Required	Optional	Never Used	Don't Know Firm Requirements	No Response
Standard questionnaire for all audit engagements (manual and computerized systems) (n=105)	56%	29%	8%	0%	7%
Supplement to standard questionnaire (for use in computer-based systems)	32	32	26	0	10
Written description of accounting system	36	49	7	0	8
System flowcharts	21	57	14	0	8
Program flowcharts	15	53	24	0	8
Program test decks	12	45	33	2	8
Integrated test facility (ITF) or other techniques introducing selected test data into the accounting system simultaneously with genuine company data	10	31	45	3	11
Audit, documentation and other software packages provided to clients by computer manufacturers	9	39	37	4	11
Generalized audit package	9	12	32	3	44
Other audit procedures and techniques that your firm considers important in its study and evaluation of internal control in a computer-based system	9	8	10	3	70

TABLE 15  
REACTION TO THE EQUITY FUNDING CASE

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Has your firm made any changes in its policy toward auditing financial statements produced in a computer-based accounting system as a result of the alleged insurance fraud case involving the Equity Funding Corporation of America?

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Have not heard of case (n=105)	7%
No, we are awaiting final outcome of pending litigation before further action is taken	23
Yes, to the extent of informal suggestions and comments exchanged by firm personnel	42
Yes, a committee has been established to study the audit implications but no recommendations have been made	4
Yes, formal changes have been made and implemented	3
Do not know firm reaction	8
No response	<u>13</u>
	100%

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### Summary

This survey was designed to reflect CPA attitudes and practices on selected issues involving audit of computer-based systems. All comparisons, observations, and conclusions were based on responses to the survey. Statistical inferences as to population attributes were limited to respondents.

The survey format included questions designed to identify the respondents by size and the nature of their practice. In addition, the technical background and proficiency of each firm was indicated by utilization of various training media. After categorizing and classifying respondents, the inquiry shifted to specific attitudes and practices relating to the audits of computer-based systems. Special attention was given to levels of competence needed for computer-based audits. The importance of internal control evaluation and the peculiarities associated with EDP systems was explored. Furthermore, the reaction of the CPA firms to the Equity Funding case was included as an indication of the relative importance of this case to their respective practice situations.

Each firm's initial reaction to the Equity Funding case was obtained in the final question of the survey. Few of the firms indicated that formal changes had been made due to Equity Funding. The largest response was that informal comments between firm personnel were made, but almost one-fourth of the firms said they would wait for the final outcome of litigation before taking any action.

The questionnaire responses were analyzed in Chapter VI. Stratifications and comparisons were made for related characteristics

and responses in order to highlight potential problem areas. The frequency tables and corresponding discussion were presented according to the eight areas of the survey questionnaire discussed in this chapter but without reference to specific question numbers.

CHAPTER VI  
ANALYSIS OF SURVEY RESPONSES

Introduction

The responses to each question of the survey of CPA firms were described in Chapter V. These responses were analyzed for indicated attitudes and practice requirements relating to computer-based audits by the various firms surveyed. The analysis primarily involved a study of responses in relation to the dimensions of respondent practices. Throughout the analytical process the responses were noticeably inter-related to the size of the responding firms. The measures of size included the geographical area served, annual revenue received, the proportion of revenue derived from audit fees, and the personnel on the audit staff. Strong correlations were noted between selected survey areas and each characteristic of firm size.

Characteristics of Respondents

Annual revenue and area served. Annual revenue was compared to the geographical area served (see Table 16). In general, firms with larger annual revenues served wider geographical areas. Only local firms indicated revenue of less than \$100,000 and nearly all local firms were under \$500,000 in annual revenue. The regional firms were highly diversified as a group with most firms spread in the \$100,000 to \$5,000,000 annual revenue range. The national and international firms were concentrated at the upper end of the scale with the majority of



TABLE 16

## COMPARISON OF ANNUAL REVENUE WITH GEOGRAPHICAL AREA SERVED

	Under \$100,000	\$100,000 - \$499,000	\$500,000 - \$999,999	\$1,000,000 - \$4,999,999	\$5,000,000 - \$15,000,000	Over \$15,000,000
Local (n = 111)	27%	65%	7%	1%	0%	0%
Regional (n = 15)	0	40	20	26	7	7
National and International (n = 15)	0	0	7	0	20	73
All Firms (n = 141)	21	55	9	3	3	9

them reporting revenue of more than \$15,000,000 annually.

Annual revenue and size of audit staff. A comparison was made between annual revenue reported by the firms and the number of personnel on each firm's professional audit staff (see Table 17). This analysis also showed that there were corresponding relationships between staff size and annual revenue among respondents. The majority of the individual practitioners earned less than \$100,000 and none of them earned over \$500,000. All of the firms with more than ten audit staff members were above the \$100,000 annual revenue level.

There were comparable increases in the annual revenue range at each category of audit staff size. The numbers of personnel on the audit staff tended to concentrate within narrow ranges of annual revenue. At each increase in staff size a higher range of revenue was included and a lower range was dropped. At the upper end of the scale virtually all of the firms with more than five hundred members of the audit staff also reported annual revenue above \$15,000,000.

Revenue and the proportion from auditing. Reported annual revenue was compared to the percentage of that revenue derived from auditing financial statements (see Table 18). Although the correspondence between these two respondent characteristics was not as strong as between annual revenue and audit staff size, there was a progression from firms with lower revenue ranges and lower percentages of revenue from auditing to firms with higher annual revenue and a greater proportion of revenue derived from auditing. A majority of firms earning less than \$100,000 in revenue also received one-fourth or less of this revenue from auditing. For most firms with annual revenue

TABLE 17

## COMPARISON OF ANNUAL REVENUE WITH AUDIT STAFF SIZE

	Under \$100,000	\$100,000 - \$499,999	\$500,000 - \$999,999	\$1,000,000 - \$4,999,999	\$5,000,000 - \$15,000,000	Over \$15,000,000
Sole Practitioner (n = 14)	86%	14%	0%	0%	0%	0%
2 - 9 (n = 78)	23	77	0	0	0	0
10 - 24 (n = 24)	0	67	29	4	0	0
25 - 99 (n = 9)	0	0	56	44	0	0
100 - 500 (n = 4)	0	0	0	0	75	25
Over 500 (n = 12)	0	0	0	0	8	92
All Firms (n = 141)	21	55	9	3	3	9

TABLE 18

COMPARISON OF ANNUAL REVENUE WITH PERCENTAGE OF  
REVENUE DERIVED FROM AUDITING

	Percentage of Revenue			
	0 - 25	26 - 50	51 - 75	76 - 100
Under \$100,000 (n=30)	90%	7%	3%	0%
\$100,000 - \$499,999 (n=78)	49	38	10	3
\$500,000 - \$999,999 (n=12)	8	50	42	0
\$1,000,000 - \$15,000,000 (n=9)	33	56	11	0
Over \$15,000,000 (n=12)	0	25	67	8
All Firms (n=141)	49	33	16	2

exceeding \$500,000, more than one-fourth of their revenue came from auditing financial statements. Auditing financial statements produced over one-half of annual revenue earned for most of the firms exceeding \$15,000,000 in revenue each year. It appears from this analysis that the relative importance of auditing as a source of revenue for these respondents increased as the size of the firm, as measured by annual revenue, increased.

#### Training Methods Utilized

Differentiating respondent groups. Training methods utilized in preparing a firm's audit staff to work with computer-based accounting systems were reviewed in terms of the percentage of annual revenue received from auditing financial statements (see Table 19). The respondents were divided into firms that received one-fourth or less of their fees from auditing, and those that received more than one-fourth of their fees from auditing.

Similarities in training modes. Although there were differences in training methods preferred by the two groups of respondents, no clear pattern developed relating training methods to audit fees as a percentage of revenue. Overall, both groups seemed to prefer continuing education courses given by professional associations such as the American Institute of Certified Public Accountants, the National Association of Accountants, and state CPA societies. In addition, job experience frequently was chosen as a method of training audit personnel to work with computer-based systems. The respondents as a whole indicated that college courses were not particularly useful in training their audit personnel.

TABLE 19

## COMPARISON OF TRAINING COURSES WITH PERCENTAGE OF REVENUE FROM AUDITING

Revenue From Auditing	Firm Wide Courses	Professional Society Courses	Equipment Manufacturer Courses	Non-Degree College Work	Degree College Work	On The Job Training	Individual Study
<b>0% - 25%: (n=69)</b>							
Frequently Used	3%	32%	3%	2%	0%	38%	6%
Occasionally Used	16	36	29	23	15	26	52
Never Used	55	13	41	46	55	17	20
No Response	26	19	27	29	30	19	22
<b>26% - 100%: (n=72)</b>							
Frequently Used	17	29	3	1	8	56	28
Occasionally Used	22	56	61	35	18	25	40
Never Used	47	10	26	50	57	13	21
No Response	14	5	10	14	17	6	11
<b>All Firms: (n=141)</b>							
Frequently Used	10	31	3	2	4	47	17
Occasionally Used	19	46	46	29	16	26	46
Never Used	51	11	33	48	56	15	21
No Response	20	12	18	21	24	12	16

Training for audit-oriented firms. Firms receiving more than one-fourth of their annual revenue from audit fees leaned more heavily toward individual self-study, job experience, and training courses prepared within their firm. Larger firms, in terms of audit personnel and proportion of audit fees, seemed to devote more internal resources to training audit personnel to work with computer-based accounting systems. These larger firms also appeared to utilize staff time and audit clients to a greater extent as training tools for various computer-related topics.

#### Policies and Attitudes Regarding Computer-Related Areas

As noted in Chapter V, the respondents basically agreed with the recommendations pertaining to computers and computer-based accounting systems set forth by Roy and MacNeill as encompassing part of the accountant's common body of knowledge.<sup>1</sup> However, there were differences as to whether the auditors should be able to design and install computer-based accounting systems.

The second area of coverage in the survey statements concerned the impact of computers on the audit environment. The pattern of responses for this second area was not as pronounced as for the common body of knowledge recommendations. The design and implementation of computer-based systems generally were regarded as requiring higher knowledge and proficiency than the audit of such a system. Additional

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<sup>1</sup>Robert H. Roy and James H. MacNeill, Horizons for a Profession (New York: American Institute of Certified Public Accountants, 1967), p. 213.

analysis of respondent attitudes concerning both the common body of knowledge and the impact of computers on the audit environment was included as part of the subsequent study of respondent attitudes among firms whose audit clients utilize computer-based accounting systems.

#### Involvement With Computer-Based Systems

System design and auditing compared to respondent size. A comparison was made between firm size and participation in designing and auditing computer-based accounting systems (see Table 20). The respondents were ranked according to the geographical area served (local, regional, national and international). As in most of the previous analysis, the level of involvement in system design and auditing was strongly related to the size of the responding firm as measured by size of geographical area served. Without regard to this geographical area distinction, respondents were more likely to be involved in auditing financial statements from a computer-based accounting system than in the actual design of the system itself. Less than one-third of the local firms indicated that they design computer-based systems, whereas almost all of the national and international firms participated in this activity. The audit/design service mix for smaller firms showed a stronger emphasis toward the audit function. Regional firms dealt with both audit and design activities but not to the extent that larger firms provided these services. This analysis indicates that as the area served by the firm increased, the availability of both design and audit involvement in computer-based accounting systems also was increased.



TABLE 20

## COMPARISON OF COMPUTER INVOLVEMENT WITH GEOGRAPHICAL AREA SERVED

	Local (n=111)		Regional (n=15)		National and International (n=15)	
	Yes	No	Yes	No	Yes	No
Does your firm design or help design computer-based accounting systems?	31%	69%	60%	40%	93%	7%
Does your firm have audit clients utilizing computer-based accounting systems (include those using service bureaus or time sharing systems)?	69	31	87	13	100	0

Attitudes toward common body of knowledge. Firms with audit clients using computer-based systems responded favorably to the Roy and MacNeill study (see Table 21).<sup>2</sup> This group of 105 respondents generally agreed with the recommendations for a common body of knowledge made in the study sponsored by the Institute. The responses reflected prominent support for requiring the auditor to understand the procedural steps in a computer-based system of modest complexity. Additional concurrence was also shown for comprehension of at least one computer hardware system and basic flowchart symbols.

Respondents indicated that auditors have little need for expert proficiencies in designing, programming or debugging a computer-based accounting system. This response seems to reflect an attitude that systems design and installation were clearly separable from the independent audit function, and, furthermore, that the auditor need not be able to perform both types of accounting activities.

The possible effect of computers on the audit function was analyzed for those firms with audit clients using computer-based accounting systems (see Table 22). The majority of the firms felt that the design of computer-based systems required a greater computer knowledge than auditing such a system. While the firms indicated no changes in the audit objectives because computers were used to process accounting information, the responses were divided as to whether the introduction of computers necessitated substantial

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<sup>2</sup>Roy and MacNeill, p. 213.

TABLE 21

## RESPONSES TO 'COMMON BODY OF KNOWLEDGE' BY FIRMS WITH AUDIT CLIENTS HAVING COMPUTER-BASED ACCOUNTING SYSTEMS

	Strongly Disagree	Disagree More Than Agree	Agree More Than Disagree	Strongly Agree	Undecided	Don't Know Firm Policy	No Response
The auditor should have a basic knowledge of at least one computer hardware system, including the functions of its component parts, capacities and limitations, and the more universal terms used within the system. (n=105)	6%	8%	48%	30%	4%	3%	1%
The auditor should have a working knowledge of at least one computer programming language.	11	24	35	18	9	2	1
The auditor should be able to understand the procedural steps in a computer-based accounting system of modest complexity.	1	3	39	51	4	1	1
The auditor should be able to utilize basic diagram symbols to describe the system clearly and precisely.	6	14	40	29	8	1	2
The auditor should be able to design, program, and debug a computer-based accounting system of modest complexity.	30	44	12	5	7	1	1
The auditor should be able to test a computer-based accounting system of modest complexity for compliance with design specifications.	14	25	38	16	5	1	1

TABLE 22

## RESPONSES TO THE IMPACT OF COMPUTERS BY FIRMS WITH AUDIT CLIENTS HAVING COMPUTER-BASED ACCOUNTING SYSTEMS

	Strongly Disagree	Disagree More Than Agree	Agree More Than Disagree	Strongly Agree	Undecided	Don't Know Firm Policy	No Response
Computers have had a substantial impact on changing the objectives of the audit function. (n=105)	33%	26%	25%	14%	1%	0%	1%
Computers have had a substantial impact on changes in our firm's audit procedures.	13	29	36	16	5	0	1
Computers have had a substantial impact on changes in our training of the firm's audit staff.	12	34	26	20	5	0	3
The design of computer-based accounting systems requires a greater fundamental knowledge of computers than is required to perform audits of these systems.	8	8	34	43	4	1	2
Introduction of generalized audit software packages designed to assist the auditor in a computer-based accounting system has substantially reduced the need to understand computer programming languages.	11	15	42	11	17	2	2
Introduction of generalized audit software packages has substantially improved the ability of the auditor to properly evaluate internal control in a computer-based accounting system.	7	16	45	12	16	2	2

TABLE 22 (CONTINUED)

	Strongly Disagree	Disagree More Than Agree	Agree More Than Disagree	Strongly Agree	Undecided	Don't Know Firm Policy	No Response
Introduction of generalized audit software packages has substantially reduced the need to evaluate each data processing step utilized in preparation of accounting information for financial statements. (n=105)	14%	29%	29%	5%	19%	1%	3%

revision in the audit procedures or in the staff training. There was general agreement that generalized audit packages improved the auditor's ability to evaluate internal control and reduced the need for detailed programming knowledge. Whether this possible improvement in internal control evaluation included a reduction in the need to evaluate each data processing step in the system remained an unsettled issue.

The pattern of responses for those statements included in Table 22 seemed to indicate that the majority of responding firms were aware of the theoretical impact of computers on the audit function but were divided over the corresponding actions which should then be taken.

#### Computer Audit Specialists

The designation and use of computer audit specialists was analyzed according to the size of the geographical area served by the responding firms (see Table 23). Although the majority of firms indicated that they did not designate computer audit specialists, the response rates differed among the local, regional, national and international firms. The designation of specialists tended to increase as the size of the area served by the respondents increased, but this increase was fairly small and in none of the groups was there a majority of respondents that designated certain personnel as computer audit specialists. However, most of the firms that did specify computer audit specialists said that these specialists were assigned to each audit involving a computer-based accounting system.

TABLE 23

## COMPARISON OF COMPUTER AUDIT SPECIALIST UTILIZATION WITH GEOGRAPHICAL AREA SERVED

	Local		Regional		National and International	
	Yes	No	Yes	No	Yes	No
Does your firm designate certain personnel as computer audit specialists? (Local, n=77; Regional, n=13; National and International, n=15)	34%	66%	38%	62%	47%	53%
If your firm does designate computer audit specialists, does each audit involving a computer-based accounting system have a specialist assigned? (Local, n=26; Regional, n=5; National and International, n=7)	81	19	100	0	71	29

### Knowledge of Computer-Related Areas

Overall lack of in-depth knowledge required. The depth of knowledge required for audit staff members in selected computer-related topics was analyzed for those firms that received more than one-fourth of their revenue from auditing (see Table 24). The most prominent observation derived from this table was that most of the firms did not require an in-depth knowledge of the areas surveyed. When the data in Table 24 was compared to the response rates for all respondents in Table 11 most of the frequency distributions were within a few percentage points of each other. Therefore, it appears that the depth of knowledge required for these selected topics did not vary significantly with the amount of audit work performed by those firms.

Requirements centered around auditing and basic concepts. The greatest depth of knowledge was required for auditing a computer-based system, internal control in a computer-based system, and basic data processing concepts. These three items received substantially larger respondent requirements for in-depth knowledge or moderate competency levels for their firms' audit staff personnel.

The topics such as programming languages and flowcharting, report design, system feasibility and design, computer hardware, and real time processing concepts were considered outside of the traditional scope of the audit function and were less essential for audit personnel. Even system flowcharting, which can be an important part of the internal control study by auditors, required no more than an elementary knowledge by the majority of the respondents. It was also somewhat unusual that real time processing concepts were not stressed more heavily by



TABLE 24

## KNOWLEDGE REQUIRED BY FIRMS RECEIVING MORE THAN 25% OF REVENUE FROM AUDITING

	No Knowledge Required	Elementary Understanding	Moderate Competency	In-Depth Knowledge	No Response
Basic data processing concepts (n=63)	5%	27%	51%	14%	3%
On line - real time data processing concepts	22	41	25	6	5
Computer hardware and related capabilities/limitations	22	45	25	5	3
Programming languages	41	34	19	3	3
Program flowcharting	25	39	30	3	3
System feasibility and design	27	45	22	3	3
System flowcharting	17	37	38	5	3
Report design in a computer-based system	29	40	22	3	6
System and program documentation	11	40	38	6	5
Internal control in a computer-based system	6	19	49	22	3
Auditing in a computer-based system	6	22	43	22	6

the respondents, because many businesses are using interactive processing capabilities for a substantial proportion of the accounting system processing.

### Study and Evaluation of Internal Control

Study time and the use of generalized audit packages. A comparison was made of responses to two of the survey statements relating to internal control in a computer-based accounting system (see Table 25). One of the statements asked for the respondent's attitudes concerning the effect of generalized audit packages on the evaluation of each data processing step in a computer-based system. The second statement asked for the relative change in the time devoted to the study and evaluation of internal control in computer-based systems.

There was a general correspondence between those firms who felt that more time was required to evaluate internal control in a computer-based system (over half of the respondents were in this group) and disagreement with the statement that the use of generalized audit packages reduced the need to evaluate data processing steps in the EDP system. The strongest disagreement with the statement that generalized audit packages reduced the need to evaluate all processing steps in the accounting system came from those respondents who felt that more time was required to study and evaluate internal control in a computer-based accounting system. The strongest agreement with the first statement came from those respondents who felt that less internal control study time was required for computer-based systems.

TABLE 25

## COMPARISON OF THE STUDY AND EVALUATION OF INTERNAL CONTROL WITH THE USE OF GENERALIZED AUDIT PACKAGES

Introduction of generalized audit software packages has substantially reduced need to evaluate each data processing step utilized in preparation of accounting information for financial statements.

	Strongly Disagree	Disagree More Than Agree	Agree More Than Disagree	Strongly Agree	Undecided	Don't Know Firm Policy	No Response
In relation to the total time devoted to an audit engagement, what has been the direction of change with respect to the time devoted to the study and evaluation of internal control in those clients utilizing computer-based accounting systems?							
More Time Required (n=53)	19%	28%	30%	4%	17%	0%	2%
Less Time Required (n=14)	7	29	36	14	7	0	7
No Change (n=34)	9	29	24	6	29	3	0

The group of respondents who felt that there was no change in study time required was almost equally divided as to their attitudes about the effect of generalized audit packages.

Evaluation of client record retention. The responses as to whether or not each firm included an evaluation of client procedures to meet Internal Revenue Service requirements concerning the retention of data stored on machine-sensible data media (magnetic tapes, etc.) was analyzed according to the geographical area served by the firm (see Table 26). The most noticeable characteristic of this analysis was that about half of all firms did not include this inquiry as part of the internal control evaluation. The stratification by firm size showed that more of the national and international firms included this evaluation step but the differences among respondent groups were not significant.

Audit procedure utilization according to firm size. The respondents' selection of audit procedures used in the study and evaluation of internal control in computer-based accounting systems was separated according to the size of the geographical area served by the firms (see Tables 27, 28, and 29). The responses were then analyzed according to the selected procedures used primarily for system description, documentation, or testing. The description and documentation procedures included internal control questionnaires, written narratives, and flowcharts. The system testing procedures included test decks, integrated test facilities, and software audit packages. The procedures relating to system description were more

TABLE 26  
 COMPARISON OF GEOGRAPHICAL AREA SERVED WITH EVALUATION OF  
 RECORD RETENTION IN INTERNAL CONTROL STUDY

Does your firm's study and evaluation of internal control in a computer-based accounting system involve the evaluation of compliance with Internal Revenue Service requirements and rulings concerning the retention of records stored on machine-sensible data media?	Yes	No	No Response
Local (n=77)	45%	48%	7%
Regional (n=13)	46	54	0
National and International (n=15)	60	40	0
All Firms (n=105)	48	48	4

TABLE 27

## SELECTED PROCEDURES AND TECHNIQUES USED TO STUDY INTERNAL CONTROL BY LOCAL FIRMS

	Required	Optional	Never Used	Don't Know Firm Requirements	No Response
Standard questionnaire for all audit engagements (manual and computerized system) (n=77)	50%	31%	9%	0%	10%
Supplement to standard questionnaire (for use in computer-based systems)	23	33	30	0	14
Written description of accounting system	34	47	8	0	11
System flowcharts	18	53	17	0	12
Program flowcharts	14	48	26	0	12
Program test decks	12	40	35	1	12
Integrated test facility (ITF) or other techniques introducing selected test data into the accounting system simultaneously with genuine company data	10	22	48	4	16
Audit, documentation and other software packages provided to clients by computer manufacturers	8	36	40	3	13
Generalized audit package	4	5	43	4	44
Other audit procedures and techniques that your firm considers important in its study and evaluation of internal control in a computer-based system	9	8	12	4	67

TABLE 28

## SELECTED PROCEDURES AND TECHNIQUES USED TO STUDY INTERNAL CONTROL BY REGIONAL FIRMS

	Required	Optional	Never Used	Don't Know Firm Requirements	No Response
Standard questionnaire for all audit engagements (manual and computerized systems) (n=13)	61%	31%	8%	0%	0%
Supplement to standard questionnaire (for use in computer-based systems)	38	31	31	0	0
Written description of accounting system	23	77	0	0	0
System flowcharts	23	77	0	0	0
Program flowcharts	0	69	31	0	0
Program test decks	0	54	38	8	0
Integrated test facility (ITF) or other techniques introducing selected test data into the accounting system simultaneously with genuine company data	0	38	54	8	0
Audit, documentation and other software packages provided to clients by computer manufacturers	15	46	31	0	8
Generalized audit package	23	23	0	0	54
Other audit procedures and techniques that your firm considers important in its study and evaluation of internal control in a computer-based system	8	0	8	0	84

TABLE 29

## SELECTED PROCEDURES AND TECHNIQUES USED TO STUDY INTERNAL CONTROL BY NATIONAL AND INTERNATIONAL FIRMS

	Required	Optional	Never Used	Don't Know Firm Requirements	No Response
Standard questionnaire for all audit engagements (manual and computerized systems) (n=15)	87%	13%	0%	0%	0%
Supplement to standard questionnaire (for use in computer-based systems)	67	33	0	0	0
Written description of accounting system	60	33	7	0	0
System flowcharts	33	60	7	0	0
Program flowcharts	33	60	7	0	0
Program test decks	27	60	13	0	0
Integrated test facility (ITF) or other techniques introducing selected test data into the accounting system simultaneously with genuine company data	13	67	20	0	0
Audit, documentation and other software packages provided to clients by computer manufacturers	7	46	27	13	7
Generalized audit package	20	40	7	0	33
Other audit procedures and techniques that your firm considers important in its study and evaluation of internal control in a computer-based system	7	13	7	0	74



popular among all categories of geographical size than procedures used for system testing. Comparison of the three divisions of geographical size also indicated that most of the procedures in both categories were required or optional more frequently for the national and international firms than for the local and regional firms.

Internal control questionnaires, particularly the questionnaire used for both manual and computer-based systems, were the most popular procedures. The narrative and symbolic (system and program flowcharts) descriptive techniques were selected more often as optional audit procedures, however, a majority of the national and international firms required the written narrative format.

The system testing techniques reflected lower utilization as either required or optional audit procedures and had a wider acceptance range among respondents than the descriptive techniques. Integrated test facilities were optional for the majority of national and international firms but were never used by about one-half of the regional and local firms. Generalized audit and other software packages tended to be optional among the international, national, and regional firms but were seldom used by the local firms.

#### Reaction to Equity Funding

Response of larger firms was committee oriented. The surveyed reactions to the Equity Funding case were analyzed according to the size of geographical area served by each firm (see Tables 30, 31, and 32). Since this questionnaire was mailed to the sampled firms within one year after the Equity Funding fraud was made public, these reactions

TABLE 30  
REACTION TO THE EQUITY FUNDING CASE  
BY LOCAL FIRMS

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Has your firm made any changes in its policy toward auditing financial statements produced in a computer-based accounting system as a result of the alleged insurance fraud case involving the Equity Funding Corporation of America?

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Have not heard of case (n=77)	6%
No, we are awaiting final outcome of pending litigation before further action is taken	21
Yes, to the extent of informal suggestions and comments exchanged by firm personnel	42
Yes, a committee has been established to study the audit implications but no recommendations have been made	1
Yes, formal changes have been made and implemented	3
Do not know firm reaction	9
No response	<u>18</u>
	100%

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TABLE 31  
REACTION TO THE EQUITY FUNDING CASE  
BY REGIONAL FIRMS

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Has your firm made any changes in its policy toward auditing financial statements produced in a computer-based accounting system as a result of the alleged insurance fraud case involving the Equity Funding Corporation of America?	
<hr/>	
Have not heard of case (n=13)	8%
No, we are awaiting final outcome of pending litigation before further action is taken	30
Yes, to the extent of informal suggestions and comments exchanged by firm personnel	54
Yes, a committee has been established to study the audit implications but no recommendations have been made	0
Yes, formal changes have been made and implemented	0
Do not know firm reaction	8
No response	<u>0</u>
	100%

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TABLE 32

REACTION TO THE EQUITY FUNDING CASE BY NATIONAL AND  
INTERNATIONAL FIRMS

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Has your firm made any changes in its policy toward auditing financial statements produced in a computer-based accounting system as a result of the alleged insurance fraud case involving the Equity Funding Corporation of America?

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Have not heard of case (n=15)	7%
No, we are awaiting final outcome of pending litigation before further action is taken	27
Yes, to the extent of informal suggestions and comments exchanged by firm personnel	27
Yes, a committee has been established to study the audit implications but no recommendations have been made	20
Yes, formal changes have been made and implemented	7
Do not know firm reaction	6
No response	<u>6</u>
	100%

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represented somewhat tentative attitudes about a situation that most certainly would be subjected to additional scrutiny and action by certified public accounting firms. However, from the analysis of these initial responses, it appears that the national and international firms took a more formal approach while the local and regional firms reacted to the case in a more informal manner. About half of the local and regional firms stated that their firm's reactions to Equity Funding disclosures were limited to informal comments about firm personnel. About one-fourth of the national and international firms reported this same reaction. The national and international firms, on the other hand, had a much larger frequency of instances in which they established a committee of firm personnel in order to study the audit implications of the Equity Funding fraud. One-fifth of the national and international firms, compared to almost none of the local or regional firms, stated that they had formed such committees.

Few respondents indicated policy changes. Few of the respondents indicated any formal changes in audit policies and procedures for computer-based accounting systems as a result of the Equity Funding case disclosures regardless of the size of the firm surveyed. Only three percent of the local firms and seven percent of the national and international firms indicated any formal changes.

### Summary

The responses of CPA firms surveyed relative to audits of computer-based systems were analyzed in this chapter to determine attitudes and practice requirements. The analysis primarily involved a study

of responses in relation to various dimensions of each respondent's practice, such as the geographical area served, annual revenue received, the proportion of revenue derived from audit fees, and the personnel on the audit staff. The responses for selected survey topics fell into patterns according to the size of the responding firms.

The eight primary survey areas analyzed were: (1) respondent characteristics; (2) training methods used for audit staff personnel; (3) policies and attitudes regarding computer-related items; (4) respondent involvement in design/audit of computer-based accounting systems; (5) computer audit specialists; (6) required knowledge levels in computer-related areas; (7) study and evaluation of internal control in computer-based systems; and (8) the respondents' reaction to the Equity Funding fraud.

Analysis of respondent characteristics indicated that the reported annual revenue generally increased as the size of the geographical area served by the firm increased. There were also comparable increases between reported revenue and the number of audit staff members. The comparison of annual revenue with the proportion of revenue derived from auditing financial statements supported the observation that the relative importance of auditing as a source of revenue increased as the size of the firm increased.

The analysis of various methods used to train audit personnel to work with computer-based accounting systems indicated that audit-oriented firms devoted more internal resources, individual study time, and job experience for staff preparation than the firms receiving

less than one-fourth of their revenue from auditing. Both groups responded that college courses were not particularly useful in training personnel for computer-oriented audit work.

The analysis of firm responses regarding the design and audit of computer-based accounting systems showed that the respondents were more involved in the audit of financial statements prepared from computer-based systems than in the design of these systems. However, when this audit/design service mix was analyzed according to geographical areas served, the results indicated that larger firms are much more likely to perform both services than the smaller local firms.

The survey results of the firms with audit clients using computer-based accounting systems (three-fourths of the total number of respondents) concurred with the selected recommendations made for a CPA's "common body of knowledge" by Roy and MacNeill. However, these respondents differentiated between the design of a computer-based accounting system and the audit of financial statements produced in such a system. Overall, they did not agree with statements that an auditor must possess the skills needed to design or install a computer-based system.

Of the firms that did have audit clients using computer-based accounting systems less than one-half of them designated certain staff members as computer audit specialists. There was a distinct difference in the frequency of the computer auditor designation according to the size of geographical area served by the respondents. The national and international firms had a higher frequency of computer auditor designation than did the local or regional firms.

The survey of selected computer-related topics concerning the depth of knowledge required for audit staff personnel by firms receiving more than one-fourth of their revenue from auditing pointed out a general lack of an in-depth knowledge requirement for these topics by most of the respondents. Those items that did have a substantial in-depth or moderate competency requirement were centered around auditing and internal control in a computer-based accounting system, and basic data processing concepts.

Further analysis pertaining to the study and evaluation of internal control was made into changes in the study time required in a computer-based system compared to the use of generalized audit packages, the evaluation of client record retention, and the utilization of selected internal control study procedures by respondents. There was general disagreement among the respondents who felt that more time was needed to study internal control in a computer-based system with the statement that generalized audit packages reduced the need to evaluate individual data processing steps in the computer system.

Only about half of all respondents stated that they evaluated whether or not client procedures met Internal Revenue Service requirements concerning the retention of data stored on machine-sensible data media such as magnetic tapes or disks. There were no large differences in response rates among local, regional, national and international firms for this question.

When the utilization requirements of a selected list of internal control audit procedures were analyzed according to the geographical



area served by the firms there were indications that the national and international firms had higher compliance requirements concerning the surveyed procedures. When the surveyed procedures were analyzed according to their use in the system description or system testing, the descriptive techniques were more popular among all categories of firm size. The system test procedures also reflected a wider range of respondent utilization than the descriptive procedures. Only the internal control questionnaire was required by a majority of all respondents, but supplementary questionnaires for computer-based systems and system narratives were also popular audit procedures among the respondents.

The initial reactions of the respondents to public disclosures about the Equity Funding fraud were somewhat tentative. Although most of the respondents had heard of the Equity Funding case, very few of them indicated that formal changes had been made concerning audit policies and procedures used in their respective firms. There was some difference in reaction when the results were analyzed by firm size, with the local and regional firms tending to limit their actions to informal comments among firm personnel and the national and international firms tending to form committees to study the implications of the case. However, the general reaction was a "wait-and-see" attitude before any substantive actions were taken.

Analysis of the survey data resulted in several general observations. One of these observations parallels a comment by a respondent representing one of the largest CPA firms. This person noted that "there seems to be a lot more talk about computer-based

audits than effective action" among accounting firms. Overall, the respondents seemed to grasp the conceptual principles of auditing and EDP, but lacked any sense of urgency to translate this into the consistent policies, attitudes, and technical competence necessary to deal with computer-based audits. There was nothing in the response patterns to indicate that public disclosures about Equity Funding were viewed with any particular alarm. Initial reactions to the Equity Funding fraud indicated that at the time of the survey most of the respondents were still formulating opinions about the case and its audit implications for their respective firms. Part of this lack of urgency may be due to the environment of public accounting practice which has traditionally seen substantive change evolve mainly from traumatic events.

## CHAPTER VII

### SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

#### Restatement of Objectives

In 1973 disclosure of a massive insurance fraud involving the Equity Funding Corporation of America was prominently featured in many newspapers and periodicals. The Equity Funding case was cited often as an example of a "computer fraud." Many areas of the business community felt the aftermath of such disclosure. One widely discussed issue involved the use of computers in business-related data processing and the complicity of these machines in aiding fraudulent activities.

The research objectives of this study were narrowed from the more generalized public discussions of computer fraud to specific issues relating to reported fraud involving computer-based accounting systems. With the Equity Funding case as a catalyst rather than the subject of final analysis, the inquiry included selected normative and empirical implications of audits of financial statements prepared in computer-based accounting systems. The topics selected for study were identified as: (1) the definition of audit standards and procedures; (2) the relationship of audit standards and procedures to the determination of audit examination scope; (3) the obsolescence of traditional audit standards and procedures as applied to computer-based accounting systems; and (4) current practices of certified public accountants in audit examinations involving computer-based accounting systems.

These major points provided the framework for preliminary research, and the working hypotheses subsequently developed included:

1. Audit standards represent broad guidelines for the selection of applicable procedures to be used in the audit examination.

2. The development of computer-based accounting systems has not adversely affected the usefulness of audit standards promulgated by the American Institute of Certified Public Accountants.

3. The development of computer-based accounting systems has made it necessary for auditors to incorporate additional examination procedures which specifically apply to the electronic data processing system.

4. Certified public accountants have refrained from using any standard body of procedures relating to the audit examination of computer-based accounting systems.

These tentative hypotheses were investigated using a research methodology which included a literature search, a review and analysis of the Equity Funding case, a survey of certified public accounting firms, and an analysis of the research data. The investigation results support the conclusions summarized in this chapter.

### Summary and Conclusions

1. A challenge to the validity of generally accepted auditing standards cannot be supported by the Equity Funding case.

In order to label the auditing standards as inadequate, there should be evidence of faithful adherence to the standards in situations

where the performance of an audit failed to meet the audit objectives. In the Equity Funding case most reports indicated a blatant disregard for the general and field work auditing standards. There was substantial evidence of widespread, massive collusion among various members of the company's management and between the management and outside auditors. Post-disclosure fraud audits and subsequent court litigation indicated that the management fraud was so encompassing that the major concern of the company was the continuation and cover-up of fraudulent activities instead of the legitimate insurance transactions and related business. The Equity Funding Corporation of America became, in a sense, a fraud factory whose objective was to manufacture and sell fictitious insurance policies and provide fictitious financial statements.

The detection of this fraud activity through the course of traditional audit examinations was virtually impossible because of non-independence, poor technical proficiency, and the lack of due professional care on the part of the audit personnel involved. Nonadherence to these general standards, which are prerequisites to all subsequent examination activity, substantially insured a substandard performance in planning and implementing the auditing procedures employed.

Research included in this inquiry indicated that the original marketing concept of combining insurance policies with mutual funds in an investment package was quite possibly devised by both the Equity Funding management and the audit partner on the audit engagement, Julian Weiner. Mr. Weiner, therefore, may have had a vested interest in

maintaining the profitability for this venture, and in maintaining an audit client who represented a reported 60% of his firm's audit revenue.

The audit senior on the Equity Funding account, Solomon Block, also gave little indication of independence or of his status as outside auditor. Mr. Block was listed in the Equity Funding telephone directory of company personnel, with no explanation that he was an outside auditor, and maintained a permanent office at the Equity Funding headquarters. Reports indicate that company employees considered Mr. Block to be another employee, rather than an independent auditor. Additional support for this observation was that both Mr. Weiner and Mr. Block were among those convicted of criminal fraud for their roles in the Equity Funding case.

There was also no evidence that the audit personnel involved were competent to handle an examination in a computer-based accounting system, nor that due professional care was exhibited during the audit examination. The audit senior, Solomon Block, was not a certified public accountant during the period in which he conducted the audit examination. The lack of professional certification is unusual for an auditor at the supervisory level, and there were indications that there was an attempt by the firm which merged with Wolfson, Weiner, Ratoff & Lapin to remove this audit senior from the engagement. Substantial pressure exerted by the Equity Funding executives, however, was probably responsible for retaining both Mr. Weiner, audit partner, and Mr. Block, audit senior, on the Equity Funding examination after the merger. In effect,

there was no change in auditors evidenced by the change in audit firms.

Even though the auditor's nonadherence to the general auditing standards affected the entire audit engagement, there were also indications of nonadherence to the standards of field work. The audit examination was poorly planned, supervised, and carried out from inception through completion of field work. Reports of the case indicated that the outside auditors merely observed the superficial aspects of the company's operations without making any substantial efforts to check more closely into the computer-based accounting system or the related internal controls.

Substantial portions of the audit evidence consisted of computer printouts or other data obtained directly from client personnel and was accepted without additional testing to determine the reliability of such evidence. In one situation the auditors accepted a list of insurance policies in force that showed only the last three digits of a five digit account number. Equity Funding employees were allowed thereby to duplicate policy numbers and add fictitious policies to the list. At other times, confirmation test discrepancies were cleared by phone with field agents or were dropped without clarification.

2. The computer-based accounting system was not an essential element in the perpetration of fraud in the Equity Funding case.

The computer-based accounting system facilitated the fraudulent activity and subsequent coverup of the fraud in Equity Funding, but it

was not a primary or integral feature of the fraudulent activities. Electronic data processing assisted the fraud in terms of increased processing speed for large amounts of fictitious data blended into nonfictitious business transactions and provided a "window dressing" effect of impressive printouts. However, the data processing system itself was not instrumental in the inception or promotion of illegal activities.

Based on reported Equity Funding incidents, the primary use of the computer-based accounting system for fraud-related processing was keyed to an internally-devised program designed to conceal fictitious insurance policies, as designated by special code numbers, from anyone attempting to select a sample of policies for independent confirmation and testing. In other situations the increased processing speed was helpful, but not necessary, to process and merge the fictitious data with the nonfictitious data.

The fact that such computer-assisted fraud worked was not a result of the sophistication of the electronic data processing system, but instead was a combination of the ability of company executives to intimidate the auditors and bluff their way through the rare attempts to investigate discrepancies. The Institute's Committee on Equity Funding also reached similar conclusions about the use of the computer-based accounting system as being incidental to the commission of fraudulent acts and recommended no additional changes in currently accepted auditing standards and procedures based upon disclosures concerning the use of computers in the Equity Funding case.



3. The present audit environment within the contemporary business community encourages fraud in computer-based accounting systems.

Research into the Equity Funding case and analysis of survey data from public accounting firms seems to indicate that the general influence of the business community and the environment of public accounting within which audits are conducted encourages fraudulent activity in those financial areas affected by computer-based accounting systems. The strongest influence on the business environment appears to come from the securities market and other sources of capital. In the stock market, the desire of investors to find the best buy for their investment dollars puts a great deal of pressure on company executives to continually outstrip competition and to constantly remain on top of the industry. In other words, most companies want to be known as offering a "blue chip" stock.

The designation as being a prime investment in the securities market also depends in many cases on the volatility of the stock price rather than the financial stability of the company. Average growth rates are overlooked in favor of growth rates which exceed the averages and reflect rapidly rising stock prices. There are strong indications that Equity Funding executives maneuvered their company into the situation of having to show earnings that were increasing at an increasing rate in the rather stable environment of the insurance industry. This required geometric growth pattern was designed to retain favor on Wall Street and was compounded by individual Equity Funding executives whose personal

compensation was geared to the company stock. Similar plans involving employee compensation in the form of company stock are very common throughout the corporate business community. As an important source of executive compensation, ownership of stock can serve to motivate the management team to act in the interest of the company because the company's interest will also be in their own self-interest. The problem with such reasoning is that it encourages the dishonest managers to fabricate published financial information which will affect the price of their stock. In the Equity Funding case, the corporate executives found a convenient means of defrauding the investing public and did so to their own benefit.

Another factor encouraging fraud is reflected in the attitudes and practice of certified public accountants conducting audits of financial statements. A survey of randomly selected public accounting firms included data related to various attitudes and practices used in independent audit examinations conducted within a computer-based accounting system. The survey results indicated a wide range of attitudes and professional practices among the respondents, all of whom were licensed to conduct audits as certified public accountants and were members of the American Institute of Certified Public Accountants. The indicated diversity of practice requirements and the lack of a strong commitment in dealing with the audit problems of computer-based accounting systems among certain groups of practitioners presents a hypothetical situation in which company executives can effectively manipulate the quality of audit competence through the selection of

public accounting firms.

The survey data suggested that the variations in professional practice were related in many cases to the size of the respondent firms. In these situations the larger firms tended to devote more training and development resources preparing audit staff members to work in a computer-based audit environment. In addition, the larger firms designated certain audit personnel as computer audit specialists more often than the smaller firms. However, in all size categories of firms surveyed, less than half use any type of computer-oriented audit staff specialization. If professional specialization can be viewed as a means of effectively dealing with the increased complexities of sophisticated practice areas, then this lack of specialization might be interpreted as reflecting a more superficial treatment of computer-based accounting systems than effective practice standards would dictate.

No standardized procedures or professional requirements were evident from the survey data. The widest variations seemed to occur as the survey questions moved from the general areas, such as attitudes and theoretical approaches, to the more specific areas, such as actual test procedures used. The ability to agree on generalities, but disagree on specifics, promotes an audit environment in which practitioners present a united front to the public while providing an inconsistent level of investigative detail in the audit examination. This inconsistency lends support to the conclusion of a fraud-supportive audit environment. It seems logical that additional research into the feasibility of standardizing the audit procedures would be required to

provide an acceptable examination of financial statements produced in a computer-based accounting system. Further discussion on the standardization of auditing procedures is contained in the recommendations subsequently presented in this chapter.

4. More rigidly applied and enforced general and field work auditing standards would constitute a deterrent to fraud involving computer-based accounting systems.

As applied to the Equity Funding case, the general and field work auditing standards were not properly adhered to in the audit examination of the company's financial statements. Therefore, since the prerequisite condition of proper adherence was absent, the Equity Funding case provided no support for the contention that the generally accepted auditing standards were inadequate as guidelines for satisfactory audit examinations. Furthermore, the American Institute of Certified Public Accountant's Special Committee on Equity Funding concluded that the status and adequacy of generally accepted auditing standards were unaffected by the Equity Funding fraud. The principal conditions which were missing in the Equity Funding case were the proper adherence to the standards and rigid application of necessary examination procedures as a result of such adherence. Each of the general and field work standards is analyzed as support for this conclusion.

#### General Standards

- a. The examination is to be performed by a person or

persons having adequate technical training and proficiency as an auditor.<sup>1</sup>

Introduction of electronic data processing and computer-based accounting systems have added a new dimension to adequate training and proficiency of auditors. Rigid adherence to this standard requires that any use of an EDP system by a client for significant accounting applications necessitates consideration of this EDP activity by the auditor in his examination. The skills used for the evaluation and testing process are specific to computers and computer-based systems and require training beyond general audit expertise. With this specialized training and proficiency the auditor can make informed decisions about various phases of the audit relating to the computer-based accounting system. This personal competence is crucial to the auditor's adherence to other standards and permits him to operate on the same level of expertise as the client's data processing personnel that he must deal with during the audit examination.

- b. In all matters relating to the assignment, an independence in mental attitude is to be maintained by the auditor or auditors.<sup>2</sup>

A tendency by auditors to rely on client personnel to perform data gathering, testing, confirmation, or other work contained in the audit examination and relied on by the auditor is a sacrifice of independence.

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<sup>1</sup>American Institute of Certified Public Accountants, Statement on Auditing Standards: Codification of Auditing Standards and Procedures No. 1 (New York: American Institute of Certified Public Accountants, 1973), p. 5.

<sup>2</sup>AICPA, p. 5.

The impact of such a sacrifice must be carefully weighed by the auditor in terms of other audit characteristics but cannot be fully offset by the good intentions of the auditor to remain independent nor dismissed by the lack of readily apparent impropriety in the client organization under audit. Rigorous adherence to audit independence is particularly important when a computer-based accounting system is involved because in many situations it may be necessary to utilize the client's EDP system to perform some of the audit tests. The auditor, therefore, must maintain a particularly high level of independence and awareness of possible unreliability or impropriety in the processing system.

- c. Due professional care is to be exercised in the performance of the examination and the preparation of the report.<sup>3</sup>

Rigorous adherence to the concept of due professional care would promote a greater degree of uniformity in the professional performance of audit examinations. The uniformity objective assumes that the vast majority of opinion audit work performed by practicing certified public accountants is acceptable and satisfactorily adheres to the guidelines imposed by the auditing standards. The problems encountered are generally applicable to the auditors who cannot or will not conform to the standard of due care routinely exercised by the majority of practitioners. Lack of professional care subjects these auditors to many more errors of judgment and omissions of acceptable examination procedures than

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<sup>3</sup>AICPA, p. 5.

would otherwise be present, particularly the errors of common sense that receive prominent press attention when discovered.

One of the major determinants of due professional care in any professional endeavor, particularly auditing, is the experience of the person doing the work. However, when the auditor is working with a relatively new area such as computer-based accounting systems, there is often a lack of personal experience comparable to that of working with manual processing systems. In such cases a stringent adherence to the due professional care standard would suggest the substitution of cumulative experience for individual experience through the increased use of peer review. The use of peer review of audit examinations by other members of the same accounting firm is a widespread technique used to assist in the firm's adherence to due professional care. Review of audit programs and examination results by other auditors can reduce the audit gaps through which fraudulent activities may escape detection. Additional attention to the use of peer review is contained in the recommendations subsequently presented in this chapter.

#### Standards of Field Work

- a. The work is to be adequately planned and assistants, if any, are to be properly supervised.<sup>4</sup>

There is a need to recognize the transitory nature of a great deal of the accounting data needed as audit evidence and timely use of appropriate audit tests in a computer-based accounting system. As a consequence, the planning and supervision of an audit examination becomes

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<sup>4</sup>AICPA, p. 5.

more important to the auditor due to the lengthened time span of the audit field work. The auditor must be in the right place in the client's organization at the right time in the accounting year under review. The increased need for long range audit planning and proper supervision of the interim testing throughout the audit period can benefit the auditor by permitting him to become more familiar with the client's computer-based accounting system and allowing increased evaluation time to detect unsatisfactory situations before they become entrenched in the client organization.

There is an equally important need for adequate audit planning and supervision in examinations involving computer-based accounting systems because sophisticated EDP systems lend themselves to computer-based audit techniques which require specialized audit planning. The increased utilization of generalized audit packages and integrated test facilities emphasizes the total audit period under review more than a narrowly defined year-end approach to audit field work generally used in conjunction with manual accounting systems.

- b. There is to be a proper study and evaluation of the existing internal control as a basis for reliance thereon and for the determination of the resultant extent of the tests to which auditing procedures are to be restricted.<sup>5</sup>

Computer-based accounting systems add a new significance to the concept of internal control and its importance to the independent auditor. Part of this change requires a greater reliance on the informational

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<sup>5</sup>AICPA, p. 5.



content of output from computer-based systems. Control of the system is paramount because in the traditional sense the audit trail has been largely reduced to the mechanics and electronics of the processor. Therefore, the auditor must seek greater assurance as to the integrity of the system design and performance. Recognition of this need for increased system reliance by the auditor and its effect on the importance of proper study and evaluation of internal control as a prerequisite for subsequent audit procedures was conveyed through the use of a flexible, multi-phase approach to internal control evaluation discussed in this inquiry.

Subsequent study of the Equity Funding case and analysis of the survey data obtained from certified public accounting firms indicated the need for increased depth and refinement of the study of internal control when a computer-based accounting system is utilized. However, the survey results showed that there was little inclination among many of the respondents to supplement the traditional evaluation techniques available to auditors. When the utilization responses for a selected list of procedures available to study and evaluate internal control were analyzed according to descriptive, documentation, or testing procedures there was generally a higher utilization rate for the descriptive and documentation techniques. There were comparatively lower utilization rates for the system testing procedures, particularly among the smaller size practitioners. This response might indicate a potential problem among these auditors in being able to place the substantial degree of reliance upon the proper functioning of the

accounting system that must be done when EDP is involved. If such a problem does exist on a widespread basis then auditors may be vulnerable to the characteristic of fraud which emphasizes the system's proper appearance under superficial examination. In order to minimize the problem of appearance as opposed to substance in computer-based accounting systems, a more rigid adherence to the auditing standards would require increased emphasis on in-depth system testing before an evaluation on audit reliance is made.

- c. Sufficient competent evidential matter is to be obtained through inspection, observation, inquiries, and confirmations to afford a reasonable basis for an opinion regarding the financial statements under examination.<sup>6</sup>

The competency of evidence obtained from audit examinations in computer-based accounting systems requires that particular attention be paid to the origin of such evidence. Since audit evidence is the foundation upon which an audit opinion is based, such evidence must reflect a sound and consistent level of examination effort by the auditor. In a computer-based system both the type of evidence and the time span over which it is obtained change in comparison to traditional non-EDP accounting systems. These changing characteristics of the audit environment increase the importance of hard-copy evidence for subsequent evaluation as opposed to a subjective feeling by the auditor that everything seems to be acceptable for an unqualified opinion. The ability to properly gather and analyze this evidence is closely

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<sup>6</sup>AICPA, p. 5.

interrelated with the general auditing standards and requires all of the specialized technical competence, independence and due professional care that the auditor must have to work with computer-based accounting systems. The planning and supervision of the audit examination and the study and evaluation of internal control all involve the competent evidential accumulation called for in the third standard of field work. Therefore, a strict adherence to the auditing standard concerning evidential matter also requires strict adherence to the other general standards and standards of field work as prerequisite conditions.

The data gathered in this inquiry suggests, however, that in both the specific instance of the Equity Funding fraud case and in the general implications of the practitioner survey the sufficiency and competency of evidential matter gathered during an audit examination involving a computer-based accounting system is often an inconsistent item. In the Equity Funding case the auditors basically accepted whatever documents and information that the client personnel chose to give them, and in the survey of accounting firms there was a wide dispersion of responses concerning the kinds of testing to be used and audit evidence that would be gathered. These examples suggest that a stricter adherence to auditing standards would raise the overall quality of evidential matter gathered in audit examinations and reduce the opportunities for client personnel to choose which data and records will be given to auditors as part of the audit evidence.

### Recommendations

No change in auditing standards. The recommendation of this inquiry is that no changes be made in the presently accepted auditing standards which might be specifically intended to improve the audit guidelines for auditing in a computer-based accounting system. The generally accepted auditing standards promulgated by the American Institute of Certified Public Accountants, specifically those concerned with the general standards and the standards of field work, were concluded to have been adequate in the Equity Funding case. The standards in question were not adhered to by the outside auditors and, therefore, there is no support for the allegation that the current standards are inadequate.

Increased emphasis on procedure selection. The recommendation of this inquiry is that an adequate selection of auditing procedures would be facilitated with an increased emphasis by auditors on the second standard of field work concerning the study and evaluation of internal control. In an audit involving a computer-based accounting system, the procedure selection would be the logical means for providing the examination flexibility required in order to adapt to changing audit conditions. This flexibility includes audit procedures specifically designed to deal with certain characteristics of computer-based systems as well as an improved system for selecting procedures. The procedure selection process was determined to be a crucial factor in the successful examination of financial statements produced in a computer-based accounting system.

The study and evaluation of internal control involves both the timing and scope of procedure application and should emphasize the audit implications of the accounting system and client organization before the auditing procedures are carried out. The three steps required in the evaluation process presented in this inquiry provide a systematic progression from a general review of the entire organizational structure to a detailed testing of EDP controls in other areas of audit significance. This multi-phase approach which starts with the overall organization and then focuses on specific parts of the organization is a systems approach to auditing recommended to facilitate an efficient study and evaluation of internal control and selection of subsequent examination procedures.

Possible standardization of auditing procedures. Further study into the feasibility of a standardized body of auditing procedures for use in examinations involving computer-based accounting systems has been indicated. Implementation of these suggested procedures would hopefully provide a more consistent basis for conforming to the generally accepted auditing standards. The initial survey data from this study revealed no standard set of auditing procedures for computer-based systems in general use among the survey respondents. In addition, many procedures and practice requirements varied widely.

Increased awareness of management fraud. In addition to improving the audit examination through improved procedure selection based on an efficient evaluation of the client's internal control system, the investigation of the Equity Funding case also stressed the need for the

outside auditor to be constantly aware of his own unique position as an independent auditor who must rely on his own powers of investigation and accumulation of evidential matter. The independence of his position must include an underlying knowledge on his part that the proper study and evaluation of internal control is often effective in assessing the possibilities of isolated employee improprieties, defalcations, or fraud within the accounting system. However, an internal control evaluation is virtually meaningless for assessing management fraud or widespread collusion. Top management's authority to change the organizational structure allows them to manipulate selected portions of the administrative and operational framework including the internal control system. As in the Equity Funding case, management may create a facade of respectability for fraudulent activities being carried on beneath the surface.

Increased management controls. The separation of management fraud from employee fraud gives rise to several potential additions in traditional audit examination procedures. The recommendations in this section are advocated as supplementary procedures useful in the auditor's preliminary evaluation of the client organization and its personnel. All of these recommendations have an underlying basis which is somewhat analagous to the "sunshine laws" concerning public officeholders and their activities. The concept of placing relevant management actions under independent scrutiny would presumably extend the internal control function to management activities on a more realistic level.

The first of these recommendations is the extensive use of audit

committees. These committees would include a substantial proportion of interested, capable individuals that would be outside of the corporate organization, and thus be less subject to management manipulation. The audit committee could be independent of the board of directors and would specialize in accounting and audit-related activities. As is the case with internal auditors, the use of audit committees would not be a substitute for external audit examination, but such a group would be an additional source of independent control over improper internal management activity. The major benefit would probably be as a deterrent rather than to detect fraudulent actions because most widespread, blatant schemes such as in the Equity Funding case would not be feasible if even a small degree of constant and consistent outside probing were present.

The selection, tenure, payment, and reporting duties of the audit committee members are important facets of the working relationship between such a committee and the auditor responsible for the audit report, and merit additional research before a workable plan can be initiated. However, investigation of the Equity Funding case supported the observation that there was widespread and often obvious collusion which was aided by the closed nature of the corporate environment. The essential aim of the recommended audit committee is to open the corporate environment to the auditor so that he can perform a more effective examination.

Another suggestion for controls on the improper use of management

authority is more closely related to personal controls on individual managers. The use of bonding services and polygraph examinations might be considered in conjunction with the use of audit committees. These controls may be considered as invasions of personal privacy, but in most cases would be restricted to only those areas relevant to the work of the audit committee and outside auditors. One answer to the claim that such activities would be a violation of privacy for those management personnel involved is that when large amounts of securities of these companies are publicly traded, then it is within the realm of protecting the investor's interests that certain items be known about the background and personal integrity of key members of top management. The results of the audit committee investigations, the bonding investigation and the polygraph examinations would all be integrated into the outside auditor's preliminary review of the client as part of his study and evaluation of internal control.

Increased auditor control. Audit consistency and increased professional attitude would be greatly enhanced through the utilization of required peer review among CPA firms. Analysis of auditor performance in the Equity Funding case and analysis of survey responses regarding characteristics of professional audit practice led to the conclusion that there was a substandard audit in the Equity Funding case, and, furthermore, a wide dispersion of practice requirements among the responding firms in certain aspects of auditing in computer-based accounting systems. Both sections of this inquiry demonstrated



a need for a more consistent level of competent audit practice among certified public accounting firms.

The peer review issue has been discussed and used to some extent by various state CPA societies but largely on a voluntary basis. These self-improvement programs seem to be well received among the conscientious practitioners who are already doing a reasonably good job, but welcome the constructive comments of their fellow practitioners. However, this positive attitude in the area of improving professional achievement in order to render better service in the area of opinion audits was not present in the audit environment of the Equity Funding case, and voluntary compliance would have probably had little effect on the auditors involved.

The peer review program advocated in this proposal would involve a required review of selected audit clients on a prearranged rotation cycle. The primary objective of such a program would be to provide the capacity of continuing multi-level review which the larger national and international firms already provide on an internal basis. This review would be particularly beneficial to the small local firms and individual practitioners who may not be aware of possible gaps in professional practice between their work and the work of their peers. In the unfortunate case where these auditors are already aware of their substandard examinations, but are not interested in improvement, the review requirement would assist the accounting profession in identifying such practitioners for subsequent disciplinary or administrative action.

### A Concluding Comment

Computer-based accounting systems offer new challenges and unique responsibilities for auditors. In several notable instances, however, auditing standards have been inconsistently interpreted by the public accounting profession. As a consequence the real impact of computer-based accounting systems on auditing has not been properly reflected. The audit performance problem relates directly to raising the median level of adherence to auditing standards and to reducing the range of performance around this median.

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APPENDIX A

INTERNAL CONTROL QUESTIONNAIRES

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QUESTIONNAIRE COVERING ENTIRE  
PROCESSING FUNCTION<sup>1</sup>

THIS APPENDIX CONTAINS a model questionnaire for obtaining information on internal control in an electronic data processing installation.

The questionnaire is divided into two major parts:

1. Questions relating to the operation of the electronic data processing installation
2. Questions relating to an individual data processing application.

This division reflects the fact that the organization, the policies and the procedures of the installation provide an environment in which individual applications are run. This environment must be understood before the controls associated with individual applications can be evaluated.

The review of a computer processing application should be carried out in the context of the entire processing cycle, including both computer and non-computer processing and controls. The firm's internal review questionnaire (or other method used to obtain information) should cover the non-computer procedures and controls; the application questionnaire is structured to provide only the added questions related to computer processing.

The number of questions to be included in a review questionnaire depends somewhat on how broadly the auditor views

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<sup>1</sup>Gordon Davis, Auditing and EDP (New York: American Institute of Certified Public Accountants, 1968), pp. 326-340.

his audit assignment—whether he looks at items affecting operational efficiency as well as items directly affecting the audit. The control significance of the response to a particular question often, however, depends on the characteristics of the system being evaluated and the total picture of internal control. Each question in the model is coded A, B or C according to its general control significance. This code is only an indicator to aid the auditor; he must evaluate the significance in each particular case.

CODE	IN GENERAL, QUESTION RELATES TO:
A	Control element which may affect the auditor's evaluation of internal control
B	Control element which tends to affect data processing safeguards but is, however, not likely to affect audit procedures
C	Element affecting operational effectiveness or efficiency

The questions are arranged here so that reference can be made to the appropriate chapter in this book if background information is desired. For this reason there are no detailed explanations accompanying the questions.

All yes-or-no questions are worded so that "yes" is a favorable response and "no" indicates that further investigation or evaluation is required. The auditor may also wish to expand and clarify his answers by adding comments.

## PART I: QUESTIONNAIRE FOR OPERATION OF THE ELECTRONIC DATA PROCESSING INSTALLATION

### 1. *Background*

1-1. Where is the computer located? \_\_\_\_\_

1-2. Give a brief description of equipment \_\_\_\_\_

(a) Manufacturer and model number of computer  
(this can be obtained from a copy of the manufacturer's invoice) \_\_\_\_\_

(b) Internal memory size \_\_\_\_\_

- (c) File storage devices
- Magnetic tape (no. units \_\_\_\_\_)
  - Disk (no. drives \_\_\_\_\_)
  - Other (describe)
- 
- 
- 

- (d) Input/output devices
- Card reader
  - Card punch
  - Printer
  - Other (list)
- 
- 
- 

1-3. Applications

- Cash
  - Receivables
  - Inventory
  - Property, plant and equipment
  - Payables
  - Sales
  - Payroll
  - Cost and expenses
  - Other (list major ones below)
- 
- 
- 

2. Organization

2-1. Prepare or obtain an organization chart of the EDP organization. Determine position titles, job descriptions and names of persons in these positions.

2-2. Is there a segregation of duties such that:

(a) The functions and duties of system



- |   | Yes                      | No                       |   |
|---|--------------------------|--------------------------|---|
| design and programming are separate from computer operation?  | <input type="checkbox"/> | <input type="checkbox"/> | A |
| (b) Programmers do not operate the computer for regular processing runs?  | <input type="checkbox"/> | <input type="checkbox"/> | A |
| (c) Computer operators are restricted from access to data and program information not necessary for performing their assigned task?   | <input type="checkbox"/> | <input type="checkbox"/> | B |
| (d) The employees in data processing are separated from all duties relating to the initiation of transactions and initiation of requests for changes to the master files?                 | <input type="checkbox"/> | <input type="checkbox"/> | A |
| 2-3. Are the operators assigned to individual application runs rotated periodically?  | <input type="checkbox"/> | <input type="checkbox"/> | A |
| 2-4. Are the computer operators required to take vacations?   | <input type="checkbox"/> | <input type="checkbox"/> | B |
| 2-5. Is supervision of operators sufficient to verify operator's adherence to prescribed operating procedures?  | <input type="checkbox"/> | <input type="checkbox"/> | B |
| <b>3. The Control Function</b>  |                          |                          |   |
| 3-1. Is there a person or group charged with responsibility for the control function in the data processing department? Obtain description of duties. These duties will normally include: |                          |                          |   |
| (a) Control over receipt of input data and recording of control information?  | <input type="checkbox"/> | <input type="checkbox"/> |   |
| (b) Reconciliation of control information (batch control with computer control totals, run-to-run controls, etc.)?  | <input type="checkbox"/> | <input type="checkbox"/> |   |
| (c) Control over distribution of output?  | <input type="checkbox"/> | <input type="checkbox"/> |   |

- |  | Yes                      | No                       |   |
|--|--------------------------|--------------------------|---|
| (d) Control over errors to ensure that they are reported, corrected and reprocessed?   | <input type="checkbox"/> | <input type="checkbox"/> |   |
| (e) Review of console logs, error listings and other evidence of error detection and control?  | <input type="checkbox"/> | <input type="checkbox"/> |   |
| 3-2. Is the person or group responsible for control over processing by the data processing department independent from the person or group responsible for the operation of the equipment?   | <input type="checkbox"/> | <input type="checkbox"/> | A |
| 3-3. If there is an internal auditing group, does it perform EDP control activities related to:  |                          |                          |   |
| (a) Review or audit?   | <input type="checkbox"/> | <input type="checkbox"/> | A |
| (b) Day-to-day control activities?   | <input type="checkbox"/> | <input type="checkbox"/> | A |
| If "yes" note the nature and extent of these activities.   |                          |                          |   |
| 3-4. Are master file changes or changes in program data factors authorized in writing by initiating departments?   | <input type="checkbox"/> | <input type="checkbox"/> | A |
| 3-5. Are departments that initiate changes in master file data or program data factors furnished with notices or a register showing changes actually made? (Examples of such changes are changes in pay rates, selling prices, credit limits and commission tables.) | <input type="checkbox"/> | <input type="checkbox"/> | A |

#### 4. Control Over the Console

- 4-1. Are provisions adequate to prevent unauthorized entry of program changes and/or data through the console? The following questions reflect the types of controls which may be used.
- (a) Are adequate machine operation logs being maintained? For each

- |   | Yes                      | No                       |   |
|---|--------------------------|--------------------------|---|
| run, these should include information covering the run identification, operator, start and stop time, error halts and delays, and details of re-runs. Idle time, down time, program testing, etc., should also be logged. | <input type="checkbox"/> | <input type="checkbox"/> | B |
| (b) Is there an independent examination of computer logs to check the operator performance and machine efficiency? If "yes,"  | <input type="checkbox"/> | <input type="checkbox"/> | B |
| (1) How often _____   |                          |                          |   |
| (2) By whom _____   |                          |                          |   |
| (3) How carried out _____   |                          |                          |   |
| _____   |                          |                          |   |
| _____   |                          |                          |   |
| (c) If the computer has a typewriter console, is there an independent examination of the console printouts to detect operator problems and unauthorized intervention?   | <input type="checkbox"/> | <input type="checkbox"/> | B |
| (1) How often _____   |                          |                          |   |
| (2) By whom _____   |                          |                          |   |
| (3) How performed _____   |                          |                          |   |
| _____   |                          |                          |   |
| _____   |                          |                          |   |
| _____   |                          |                          |   |

### 5. *Management Practices*

- |   |                          |                          |   |
|---|--------------------------|--------------------------|---|
| 5-1. Is there a written plan for future changes to be made to the system?             | <input type="checkbox"/> | <input type="checkbox"/> | C |
| 5-2. Is approval for each application supported by a study of cost and benefit?       | <input type="checkbox"/> | <input type="checkbox"/> | C |
| 5-3. Is a schedule of implementation prepared showing actual versus planned progress? | <input type="checkbox"/> | <input type="checkbox"/> | C |

- |   | Yes                      | No                       |   |
|---|--------------------------|--------------------------|---|
| 5-4. Is there a systems and procedures manual for the activities of the installation?   | <input type="checkbox"/> | <input type="checkbox"/> | C |
| <b>6. Documentation</b>   |                          |                          |   |
| 6-1. Is a run manual prepared for each computer run?  | <input type="checkbox"/> | <input type="checkbox"/> | C |
| 6-2. Are operator instructions prepared for each run?   | <input type="checkbox"/> | <input type="checkbox"/> | C |
| 6-3. Are documentation practices adequate? Does the normal documentation for an application include the following?                                    | <input type="checkbox"/> | <input type="checkbox"/> | C |
|   | Yes                      | No                       |   |
| Problem statement   | <input type="checkbox"/> | <input type="checkbox"/> |   |
| System flowchart  | <input type="checkbox"/> | <input type="checkbox"/> |   |
| Record layouts  | <input type="checkbox"/> | <input type="checkbox"/> |   |
| Program flowcharts  | <input type="checkbox"/> | <input type="checkbox"/> |   |
| Program listing   | <input type="checkbox"/> | <input type="checkbox"/> |   |
| Test data   | <input type="checkbox"/> | <input type="checkbox"/> |   |
| Operator instructions   | <input type="checkbox"/> | <input type="checkbox"/> |   |
| Summary of controls   | <input type="checkbox"/> | <input type="checkbox"/> |   |
| Approval and change record  | <input type="checkbox"/> | <input type="checkbox"/> |   |
| 6-4. Is there supervisory review of documentation to ensure that it is adequate?  | <input type="checkbox"/> | <input type="checkbox"/> | B |
| 6-5. Is documentation kept up to date?  | <input type="checkbox"/> | <input type="checkbox"/> | C |
| <b>7. Program Revisions</b>   |                          |                          |   |
| 7-1. Is each program revision authorized by a request for change properly approved by management or supervisory personnel?                            | <input type="checkbox"/> | <input type="checkbox"/> | B |
| (a) Who authorizes? _____   |                          |                          |   |
| (b) How evidenced? _____  |                          |                          |   |
| 7-2. Are program changes, together with their effective dates, documented in a manner which preserves an accurate chronological record of the system? | <input type="checkbox"/> | <input type="checkbox"/> | C |

- |   | Yes                      | No                       |   |
|---|--------------------------|--------------------------|---|
| 7-3. Are program revisions tested in the same manner as new programs?   | <input type="checkbox"/> | <input type="checkbox"/> | B |
| <b>8. Hardware Controls</b>   |                          |                          |   |
| Unless there is evidence of hardware-based processing difficulties, the auditor can usually rely on the hardware. No review is ordinarily required for audit purposes.                                      |                          |                          |   |
| <b>9. Control Over Input and Output Data</b>  |                          |                          |   |
| Although the control over input and output data must be exercised for each application, general questions regarding these controls may be used to ascertain policy regarding the use of control procedures. |                          |                          |   |
| 9-1. Are initiating departments required to establish independent control over data submitted for processing (through the use of batch totals, document counts, or otherwise)?                              | <input type="checkbox"/> | <input type="checkbox"/> | A |
| 9-2. Is a schedule maintained of the reports and documents to be produced by the EDP system?  | <input type="checkbox"/> | <input type="checkbox"/> | B |
| 9-3. Are output reports and documents reviewed before distribution to ascertain the reasonableness of the output?   | <input type="checkbox"/> | <input type="checkbox"/> | A |
| 9-4. Are there adequate procedures for control over the distribution of reports?  | <input type="checkbox"/> | <input type="checkbox"/> | B |
| <b>10. Programmed Control Over Processing</b>   |                          |                          |   |
| Programmed controls must be evaluated in terms of each application.   |                          |                          |   |
| <b>11. Controlling Error Investigations</b>   |                          |                          |   |
| 11-1. Are all error corrections reviewed and approved by persons who are independent of the data processing department?   | <input type="checkbox"/> | <input type="checkbox"/> | A |

- |   | Yes                      | No                       |   |
|---|--------------------------|--------------------------|---|
| 11-2. Are records maintained of errors occurring in the EDP system?   | <input type="checkbox"/> | <input type="checkbox"/> | C |
| 11-3. Are these error records periodically reviewed by someone independent of data processing?  | <input type="checkbox"/> | <input type="checkbox"/> | C |
| <b>12. Physical Safeguards Over Files</b>   |                          |                          |   |
| 12-1. Are important computer programs, essential documentation, records and files kept in fire-proof storage?   | <input type="checkbox"/> | <input type="checkbox"/> | C |
| 12-2. Are copies of important programs, essential documentation, records and files stored in off-premises locations?  | <input type="checkbox"/> | <input type="checkbox"/> | C |
| <b>13. Procedural Controls for Safeguarding Files</b>   |                          |                          |   |
| 13-1. Are external labels used on all files?  | <input type="checkbox"/> | <input type="checkbox"/> | B |
| 13-2. Are internal labels used on all magnetic tape files?  | <input type="checkbox"/> | <input type="checkbox"/> | B |
| 13-3. Are file header labels checked by programs using the files?   | <input type="checkbox"/> | <input type="checkbox"/> | B |
| 13-4. Are file protection rings used on all magnetic tape files to be preserved?  | <input type="checkbox"/> | <input type="checkbox"/> | B |
| 13-5. Is the responsibility for issuing and storing magnetic tape or portable disk packs assigned to a tape librarian, either as a full-time or part-time duty? | <input type="checkbox"/> | <input type="checkbox"/> | C |
| <b>14. Capability for File Reconstruction</b>   |                          |                          |   |
| 14-1. Are there provisions for the use of alternative facilities in the event of fire or other lengthy interruption?  | <input type="checkbox"/> | <input type="checkbox"/> | C |
| 14-2. Is there adequate data processing insurance (other than fire coverage)?   | <input type="checkbox"/> | <input type="checkbox"/> | B |
| 14-3. Are data processing personnel covered by fidelity insurance?  | <input type="checkbox"/> | <input type="checkbox"/> | B |

## PART II. QUESTIONNAIRE FOR INDIVIDUAL APPLICATIONS

The questions in this section are expected to supplement an internal review questionnaire or any other information-obtaining method. They should enable the auditor to obtain information on whether or not various control techniques have been used in the computer processing phase of a particular application.

The questionnaire is organized around the following control points:

1. Adequacy of control over input data
  - (a) Verification of correctness of input data
  - (b) Control over transmittal of data for processing
  - (c) Validity tests and other tests of input data
2. Adequacy of control over processing
  - (a) Control for completeness of processing
  - (b) Checks for correctness of processing
  - (c) Handling of rejects
  - (d) Management trail or audit trail
3. Adequacy of control over programs and data files
  - (a) Documentation
  - (b) Control over changes to master files
  - (c) Back-up procedures

The questions are numbered from 101 to distinguish them from questions in the general questionnaire. In cases where a control can be implemented by two or more methods, the related question is followed by a check-list of common control procedures. For each application (or run) related to the audit, the auditor should obtain information sufficient for answering all the relevant questions.

### 101. *Control Over Input and Output for an Application*

101-1. Are there adequate controls over the

- |  | Yes                      | No                       |   |
|--|--------------------------|--------------------------|---|
| creation of data and its conversion to machine-readable form?  | <input type="checkbox"/> | <input type="checkbox"/> | A |
| (a) Procedural controls <input type="checkbox"/>   |                          |                          |   |
| (b) Mechanical or visual verification <input type="checkbox"/>   |                          |                          |   |
| (c) Check digit <input type="checkbox"/>   |                          |                          |   |
| 101-2. Is there adequate control over transmittal and input of data to detect loss or nonprocessing? Note data field controlled.                               | <input type="checkbox"/> | <input type="checkbox"/> | A |
| <i>Field</i>   |                          |                          |   |
| (a) Financial control totals _____   |                          |                          |   |
| (b) Hash control totals _____  |                          |                          |   |
| (c) Document counts _____  |                          |                          |   |
| (d) Sequential numbering of input documents _____  |                          |                          |   |
| (e) Other _____  |                          |                          |   |
| 101-3. Are the input control totals and run-to-run control totals for each application checked by someone other than the equipment operator?<br>By whom? _____ | <input type="checkbox"/> | <input type="checkbox"/> | A |
| 101-4. If data transmission is used, are controls adequate to determine that transmission is correct and no messages are lost?                                 | <input type="checkbox"/> | <input type="checkbox"/> | B |
| (a) Message counts <input type="checkbox"/>  |                          |                          |   |
| (b) Character counts <input type="checkbox"/>  |                          |                          |   |
| (c) Dual transmission <input type="checkbox"/>   |                          |                          |   |
| (d) Other _____  |                          |                          |   |
| 101-5. Is input data adequately tested for validity, correctness and sequence?   | <input type="checkbox"/> | <input type="checkbox"/> | B |
| Note: Questions may have to be applied to each important data field of the input being reviewed by the auditor.  |                          |                          |   |



*Fields Tested*

- (a) Validity tests:  
 (1) Valid code \_\_\_\_\_  
 (2) Valid character \_\_\_\_\_  
 (3) Valid field \_\_\_\_\_  
 (4) Valid transaction \_\_\_\_\_  
 (5) Valid combinations \_\_\_\_\_  
 (6) Missing data \_\_\_\_\_
- (b) Sequence \_\_\_\_\_  
 (c) Limit \_\_\_\_\_  
 (d) Reasonableness \_\_\_\_\_  
 (e) Other \_\_\_\_\_

Yes No

- 101-6. Is control over distribution of output adequate? Describe.   B
- 101-7. Describe the control function, if any, for evaluating quality of output.

102. *Programmed Control Over Processing*

- 102-1. Are control totals used to check for completeness of processing? These may include trailer file labels, run-to-run totals, etc.   B
- 102-2. Are programmed controls used to test processing of significant items?   B

*Item applied to*

- (a) Limit and reasonableness test \_\_\_\_\_
- (b) Crossfooting test \_\_\_\_\_
- 102-3. Does the program check for improper switch settings (if sense switches are used?)   C

103. *Control Over Handling of Errors*

- 103-1. Does the program provide an adequate console printout of control in-

- |  | Yes                      | No                       |   |
|--|--------------------------|--------------------------|---|
| formation (switch settings, control violations, operator intervention, etc.)?  | <input type="checkbox"/> | <input type="checkbox"/> | B |
| 103-2. When a program is interrupted, are there adequate provisions for re-start?  | <input type="checkbox"/> | <input type="checkbox"/> | C |
| 103-3. Are there adequate controls over the process of identifying, correcting and reprocessing data rejected by the program?  | <input type="checkbox"/> | <input type="checkbox"/> | B |
| 103-4. Inquire into handling of unmatched transactions (no master record corresponding to transaction record). Is it adequate? | <input type="checkbox"/> | <input type="checkbox"/> | A |
| (a) Reject and note on error log   | <input type="checkbox"/> |                          |   |
| (b) Reject and write on suspense record  | <input type="checkbox"/> |                          |   |
| (c) Other _____  |                          |                          |   |

#### 104. Control Over Program and Data Files

- |   |                          |                          |   |
|---|--------------------------|--------------------------|---|
| 104-1. Is there adequate up-to-date documentation for the application | <input type="checkbox"/> | <input type="checkbox"/> | C |
|   | Yes                      | No                       |   |
| (a) Application summary   | <input type="checkbox"/> | <input type="checkbox"/> |   |
| (b) Run manuals   | <input type="checkbox"/> | <input type="checkbox"/> |   |
| (c) Operator instructions   | <input type="checkbox"/> | <input type="checkbox"/> |   |
| 104-2. Is test data documented and kept up to date                    | <input type="checkbox"/> | <input type="checkbox"/> | C |
| 104-3. Are controls over master file changes adequate                 | <input type="checkbox"/> | <input type="checkbox"/> | B |
|   | Yes                      | No                       |   |
| (a) Written request for change from outside data processing           | <input type="checkbox"/> | <input type="checkbox"/> |   |

- |   | Yes                      | No                       |
|---|--------------------------|--------------------------|
| (b) Register of all changes reviewed by initiating department | <input type="checkbox"/> | <input type="checkbox"/> |
| (c) Supervisory or other review of changes                    | <input type="checkbox"/> | <input type="checkbox"/> |

- |   | Yes                      | No                       |   |
|---|--------------------------|--------------------------|---|
| 104-4. Are there adequate provisions for periodically checking master file contents | <input type="checkbox"/> | <input type="checkbox"/> | B |

- |  | Yes                      | No                       |
|--|--------------------------|--------------------------|
| (a) Periodic printout and review         | <input type="checkbox"/> | <input type="checkbox"/> |
| (b) Periodic test against physical count | <input type="checkbox"/> | <input type="checkbox"/> |
| (c) Other _____                          |                          |                          |

- |   |                          |                          |   |
|---|--------------------------|--------------------------|---|
| 104-5. Are the back-up and reconstruction provisions adequate<br>Describe _____ | <input type="checkbox"/> | <input type="checkbox"/> | B |
|---|--------------------------|--------------------------|---|

### 105. *Management or Audit Trail*

105-1. Do the records or references provide the means to adequately:

- |  |                          |                          |   |
|--|--------------------------|--------------------------|---|
| (a) Trace any transaction forward to a final total?                      | <input type="checkbox"/> | <input type="checkbox"/> | A |
| (b) Trace any transaction back to the original source document or input? | <input type="checkbox"/> | <input type="checkbox"/> | A |
| (c) Trace any final total back to the component transactions?            | <input type="checkbox"/> | <input type="checkbox"/> | A |

105-2. When ledgers (general or subsidiary) are maintained on computer media, does the system of processing provide:

- |   |                          |                          |   |
|---|--------------------------|--------------------------|---|
| (a) An historical record of activity in the accounts? | <input type="checkbox"/> | <input type="checkbox"/> | B |
|---|--------------------------|--------------------------|---|

- |  | <i>Yes</i>               | <i>No</i>                |          |
|--|--------------------------|--------------------------|----------|
| (b) A periodic trial balance of the accounts?  | <input type="checkbox"/> | <input type="checkbox"/> | <b>B</b> |
| 105-3. Are source documents retained for an adequate period of time in a manner which allows identification with related output records and documents? | <input type="checkbox"/> | <input type="checkbox"/> | <b>C</b> |

QUESTIONNAIRE COVERING  
COMPUTER SYSTEM<sup>2</sup>

Prepared by	CLIENT _____
_____	Date _____
_____	_____
_____	_____
Client personnel consulted	Position
_____	_____
_____	_____
_____	_____
Reviewed by	Date
_____	_____

This questionnaire is to be used to evaluate the controls over the electronic data processing segment of the company's accounting system. It is to supplement the internal control questionnaire used for manual and semiautomatic systems. The conventional questionnaire will continue to be used to evaluate the controls over assets and data before and after data processing by the computer.

The answer to each question should be checked in the appropriate column: Yes, No or N/A (Not Applicable). If the question is applicable, an affirmative answer indicates adequate internal control. However, a negative answer must be completely investigated to see whether alternative procedures provide the desired control.

Some of the questions refer to the controls over the operation of the EDP department, while others refer to processing controls incorporated into specific applications. When considering the questions which relate to specific applications, insert the name of each application at the top of a column and check the blocks in the proper columns. Consider the controls over each application individually; a processing control may be present in one application but not in another.

<sup>2</sup>Walter B. Meigs, John B. Larsen, and Robert E. Meigs. Principles of Auditing, 5th Edition. (Homewood, Illinois: Richard D. Irwin, Inc., 1973), pp. 189-197.

Prepared by	CLIENT _____	Date _____
_____	_____	_____
_____	_____	_____
Client personnel consulted	_____	Position _____
_____	_____	_____
_____	_____	_____
_____	_____	_____
Reviewed by	_____	Date _____
_____	_____	_____

This questionnaire is to be used to evaluate the controls over the electronic data processing segment of the company's accounting system. It is to supplement the internal control questionnaire used for manual and semiautomatic systems. The conventional questionnaire will continue to be used to evaluate the controls over assets and data before and after data processing by the computer.

The answer to each question should be checked in the appropriate column: Yes, No or N/A (Not Applicable). If the question is applicable, an affirmative answer indicates adequate internal control. However, a negative answer must be completely investigated to see whether alternative procedures provide the desired control.

Some of the questions refer to the controls over the operation of the EDP department, while others refer to processing controls incorporated into specific applications. When considering the questions which relate to specific applications, insert the name of each application at the top of a column and check the blocks in the proper columns. Consider the controls over each application individually; a processing control may be present in one application but not in another.

**Section A -- General Information**

A-1 Where is the computer located? \_\_\_\_\_

A-2 Give a brief description of equipment \_\_\_\_\_

(a) Manufacturer and model number of computer (this can be obtained from a copy of the manufacturer's invoice) \_\_\_\_\_

(b) Internal memory size \_\_\_\_\_

(c) File storage devices

Magnetic tape (no. units \_\_\_\_\_) \_\_\_\_\_  
Disk (no. drives \_\_\_\_\_) \_\_\_\_\_  
Other (describe) \_\_\_\_\_

(d) Input/output devices

Card reader \_\_\_\_\_  
Card punch \_\_\_\_\_  
Printer \_\_\_\_\_  
Other (list) \_\_\_\_\_

A-3 Applications

Cash \_\_\_\_\_  
Receivables \_\_\_\_\_  
Inventory \_\_\_\_\_  
Property, plant and equipment \_\_\_\_\_  
Payables \_\_\_\_\_  
Sales \_\_\_\_\_  
Payroll \_\_\_\_\_  
Cost and expenses \_\_\_\_\_  
Other (list major ones below) \_\_\_\_\_**Section B -- Organization of the EDP Function**

An important factor in internal control is the organization of the EDP department. It must be so designed to give maximum service to other departments, yet be independent of them. The procedures in the EDP department must be documented, with a minimum of oral instructions. Obtain or prepare an organization chart of the EDP organization.

	<u>Yes</u>	<u>No</u>	<u>N/A</u>
<b>B-1</b> Is there a segregation of duties such that:			
(a) The functions and duties of system design and programming are separate from computer operation?	_____	_____	_____
(b) Programmers do not operate the computer for regular processing runs?	_____	_____	_____
(c) Computer operators are restricted from access to data and program information not necessary for performing their assigned task?	_____	_____	_____
(d) The employees in data processing are separated from all duties relating to the initiation of requests for changes to the master files?	_____	_____	_____
<b>B-2</b> Are the operators assigned to individual application runs rotated periodically?	_____	_____	_____
<b>B-3</b> Are the computer operators required to take vacations?	_____	_____	_____
<b>B-4</b> Is supervision of operators sufficient to verify operator's adherence to prescribed operating procedures?	_____	_____	_____
<b>B-5</b> Is access to the computer center limited to persons having a legitimate reason for being there?	_____	_____	_____
<b>B-6</b> Is there a person or group charged with responsibility for the control function in the data processing department? Obtain description of duties. These duties will normally include:	_____	_____	_____
(a) Control over receipt of input data and recording of control information.	_____	_____	_____
(b) Reconciliation of control information (batch control with computer control totals, run-to-run controls, etc.).	_____	_____	_____
(c) Control over distribution of output.	_____	_____	_____
(d) Control over errors to ensure that they are reported, corrected and reprocessed.	_____	_____	_____
(e) Review of console logs, error listings and other evidence of error detection and control.	_____	_____	_____
<b>B-7</b> Is the person or group responsible for control over processing by the data processing department independent from the person or group responsible for the operation of the equipment?	_____	_____	_____
<b>B-8</b> If there is an internal auditing group, does it perform EDP control activities related to:			
(a) Review or audit?	_____	_____	_____







	#1			#2		
	Yes	No	N/A	Yes	No	N/A
D-2 Are output reports and documents reviewed before distribution to ascertain the reasonableness of the output?	_____	_____	_____	_____	_____	_____
D-3 Are there adequate procedures for control over the distribution of reports?	_____	_____	_____	_____	_____	_____
D-4 Describe the control function, if any, for evaluating quality of output.	_____					
<b>Section E -- Programmed Controls</b>						
E-1 Do the program loading routines include tests to verify that the individual programs are completely and accurately read into inventory? (Card counts, hash totals, record counts, sequence checks, etc.)	_____	_____	_____	_____	_____	_____
E-2 Are control totals used to check for completeness of processing? These may include trailer file labels, run-to-run totals, etc.	_____	_____	_____	_____	_____	_____
E-3 Are programmed controls used to test processing of significant items? For instance,	_____					
(a) Limit and reasonableness test	_____					
(b) Crossfooting test	_____					
E-4 Does the program check for improper switch settings (if sense switches are used)?	_____	_____	_____	_____	_____	_____
E-5 Does the program provide an adequate console printout of control information (switch settings, control violations, operator intervention, etc.)?	_____	_____	_____	_____	_____	_____
E-6 When a program is interrupted, are there adequate provisions for re-start?	_____	_____	_____	_____	_____	_____
E-7 Are there adequate controls over the process of identifying, correcting and reprocessing data rejected by the program?	_____	_____	_____	_____	_____	_____
E-8 Inquire into handling of unmatched transactions (no master record corresponding to transaction record). Is it adequate?	_____					
(a) Reject and note on error log	_____					
(b) Reject and write on suspense record	_____					
(c) Other (describe) _____	_____					



<u>Section H--Management of the EDP Department</u>	<u>Yes</u>	<u>No</u>	<u>N/A</u>
H-1 Is a run manual prepared for each computer run?	_____	_____	_____
H-2 Are operator instructions prepared for each run?	_____	_____	_____
H-3 Are documentation practices adequate? Does the normal documentation for an application include the following?	_____	_____	_____
Problem statement	_____	_____	_____
System flowchart	_____	_____	_____
Record layouts	_____	_____	_____
Program flowcharts	_____	_____	_____
Program listing	_____	_____	_____
Test data	_____	_____	_____
Operator instructions	_____	_____	_____
Summary of controls	_____	_____	_____
Approval and change record	_____	_____	_____
H-4 Is there supervisory review of documentation to ensure that it is adequate?	_____	_____	_____
H-5 Is documentation kept up to date?	_____	_____	_____
H-6 Is each program revision authorized by a request for change properly approved by management or supervisory personnel?	_____	_____	_____
(a) Who authorizes? _____			
(b) How evidenced? _____			
H-7 Are program changes, together with their effective dates, documented in a manner which preserves an accurate chronological record of the system?	_____	_____	_____
H-8 Are provisions adequate to prevent unauthorized entry of program changes and/or data through the console? The following questions reflect the types of controls which may be used.	_____	_____	_____
(a) Are adequate machine operation logs being maintained? For each run, these should include information covering the run identification, operator, start and stop time, error halts and delays, and details of reruns. Idle time, down time, program testing, etc., should also be logged.	_____	_____	_____
(b) Is there an independent examination of computer logs to check the operator performance and machine efficiency? If "Yes"	_____	_____	_____
(1) How often _____ (2) By whom _____			
(3) How carried out _____			
(c) If the computer has a typewriter console, is there an independent examination	_____	_____	_____

of the console printouts to detect operator problems and unauthorized intervention? \_\_\_\_\_

(1) How often \_\_\_\_\_ (2) By whom \_\_\_\_\_

(3) How performed \_\_\_\_\_

H-9 Are records maintained of errors occurring in the EDP system? \_\_\_\_\_

H-10 Are these error records periodically reviewed by someone independent of data processing? \_\_\_\_\_

H-11 Do the records or references provide the means to adequately:

(a) Trace any transaction forward to a final total? \_\_\_\_\_

(b) Trace any transaction back to the original source document or input? \_\_\_\_\_

(c) Trace any final total back to the component transactions? \_\_\_\_\_

When ledgers (general or subsidiary) are maintained on computer media, does the system of processing provide:

(a) An historical record of activity in the accounts? \_\_\_\_\_

(b) A periodic trial balance of the accounts? \_\_\_\_\_

H-12 Are source documents retained for an adequate period of time in a manner which allows identification with related output records and documents? \_\_\_\_\_

Section I -- EDP Planning

I-1 Is there a written plan for future changes to be made to the system? \_\_\_\_\_

I-2 Is approval for each application supported by a study of cost and benefit? \_\_\_\_\_

I-3 Is a schedule of implementation prepared showing actual versus planned progress? \_\_\_\_\_

I-4 Is there a systems and procedures manual for the activities of the installation? \_\_\_\_\_

APPENDIX B  
SURVEY QUESTIONNAIRE

November 1, 1973

Dear AICPA Member:

"CPAs have entered a period which is testing their abilities to respond with boldness and imagination to a host of new challenges."

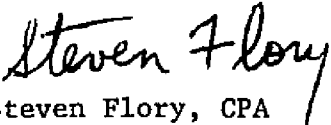
As you know, our profession is currently involved in the problem of determining the CPA's role in the installation and audit of computer-based accounting systems, and in this respect the above statement by LeRoy Layton is particularly appropriate.

As part of my doctoral dissertation at Louisiana State University, I am trying to obtain a representative survey of the opinions and procedures of certified public accounting firms pertaining to these areas. So that your firm can be included, I have enclosed a questionnaire and a postage-paid return envelope. Your responses will be held in strict confidence and will only be used to develop various statistical tables. Individual respondents will in no way be identified. Please note that the questions are printed on the front and back of each page.

Because of the knowledge of your firm's audit practice which many of these question's require, it would be preferable if the questionnaire could be completed by someone in the audit division or possessing a well-rounded knowledge of your firm's audit policies and procedures. The questionnaire has been pretested, and the time required for its completion is estimated at about 15-20 minutes. If you would like a brief summary of the results of this survey please so indicate on the questionnaire.

Thank you very much for your time and effort in answering this questionnaire. Needless to say, your participation is vital to the success of this research.

Sincerely,

  
Steven Flory, CPA

Enclosures



**INSTRUCTIONS:** Please answer the following questions by placing a check in the appropriate space provided beside each alternative. Several questions also provide space for additional information or comments. Please answer each question according to the individual instructions and to the best of your knowledge about your firm's audit practice.

1. Is your firm:
 

<input type="checkbox"/> (a) International	<input type="checkbox"/> (c) Regional
<input type="checkbox"/> (b) National	<input type="checkbox"/> (d) Local
  
2. What is the size of your firm with respect to approximate annual revenue?
 

<input type="checkbox"/> (a) Under \$100,000	<input type="checkbox"/> (d) \$1,000,000-\$ 4,999,999
<input type="checkbox"/> (b) \$100,000-\$499,999	<input type="checkbox"/> (e) \$5,000,000-\$15,000,000
<input type="checkbox"/> (c) \$500,000-\$999,999	<input type="checkbox"/> (f) Over \$15,000,000
  
3. What is the approximate size of your firm's professional audit staff, including partners?
 

<input type="checkbox"/> (a) Sole practitioner	<input type="checkbox"/> (d) 25- 99
<input type="checkbox"/> (b) 2- 9	<input type="checkbox"/> (e) 100-500
<input type="checkbox"/> (c) 10-24	<input type="checkbox"/> (f) Over 500

4. What percent of your firm's total fees are derived from each of the following areas?

	Percent of Fees					
	0	1-25	26-50	51-75	76-99	100
(a) Auditing .....						
(b) Taxes .....						
(c) Management services .....						
(d) Write-up work and un-audited statements .....						
(e) Other (please specify) ..						

5. Which of the following approaches does your firm use in training its professional staff to audit financial statements prepared in a computer-based accounting system?

	Frequently Used	Occasionally Used	Never Used
(a) Courses given by your firm .....			
(b) Courses given by professional societies (AICPA, state societies, etc.) .....			
(c) Courses given by equipment manufacturers & software companies ...			
(d) Courses (other than those leading to a degree) given by colleges and other schools .....			
(e) Courses given by colleges during degree work .....			
(f) On the job training .....			
(g) Individual self-study & programmed learning courses .....			
(h) Other (please specify)			

In each of the following statements (numbers 6 through 18) please select the response which best reflects your firm's policy with respect to the knowledge required by each member of the audit staff in the examination of financial statements produced by a computer-based accounting system.

	Strongly disagree	Disagree more than agree	Agree more than disagree	Strongly agree	Undecided	Don't know firm policy
6. The auditor should have a basic knowledge of at least one computer hardware system, including the functions of its component parts, capabilities and limitations, and the more universal terms used within the system .....						
7. The auditor should have a working knowledge of at least one computer programming language .....						
8. The auditor should be able to understand the procedural steps in a computer-based accounting system of modest complexity ...						
9. The auditor should be able to utilize basic diagram symbols to describe the system clearly and precisely .....						
10. The auditor should be able to design, program, and debug a computer-based accounting system of modest complexity .....						
11. The auditor should be able to test a computer-based accounting system of modest complexity for compliance with design specifications .....						
12. Computers have had a substantial impact on changing the objectives of the audit function .....						
13. Computers have had a substantial impact on changes in our firm's audit procedures ...						
14. Computers have had a substantial impact on changes in our training of the firm's audit staff .....						
15. The design of computer-based accounting systems requires a greater fundamental knowledge of computers than is required to perform audits of these systems .....						
16. Introduction of generalized audit software packages designed to assist the auditor in a computer-based accounting system has substantially reduced the need to understand computer programming languages .....						
17. Introduction of generalized audit software packages has substantially improved the ability of the auditor to properly evaluate internal control in a computer-based accounting system .....						
18. Introduction of generalized audit software packages has substantially reduced the need to evaluate each data processing step utilized in preparation of accounting information for financial statements .....						

19. Does your firm design or help design computer-based accounting systems?  
 (a) Yes  
 (b) No
20. Does your firm have audit clients who are utilizing computer-based accounting systems (include those clients using service bureaus or time sharing systems)?  
 (a) Yes  
 (b) No

IF 'NO', THE REMAINING QUESTIONS ARE NOT APPLICABLE TO YOUR FIRM. PLEASE RETURN THE QUESTIONNAIRE, AND THANK YOU FOR YOUR PARTICIPATION.

21. Does your firm designate certain personnel as computer-audit specialists?  
 (a) Yes  
 (b) No

If 'Yes', does each audit involving a computer-based accounting system have a computer-audit specialist assigned?

- (a) Yes  
 (b) No

22. What is the depth of knowledge in the following computer-related areas that your firm requires as a basic prerequisite for auditors who are assigned to engagements involving computer-based accounting systems?

	No knowledge required	Elementary understanding	Moderate competency	In-depth knowledge
(a) Basic data processing concepts .....				
(b) On line/real-time processing concepts .....				
(c) Computer hardware and related capabilities/limitations .....				
(d) Programming languages .....				
(e) Program flowcharting .....				
(f) System feasibility and design .....				
(g) System flowcharting .....				
(h) Report design in a computer-based system ....				
(i) System and program documentation .....				
(j) Internal control in a computer-based system .				
(k) Auditing in a computer-based environment ....				

23. In relation to the total time devoted to an audit engagement, what has been the direction of change with respect to the time devoted to the study and evaluation of internal control in those clients utilizing computer systems?  
 (a) More time required  (b) Less time required  (c) No change

24. Does your firm's study and evaluation of internal control in a computer-based accounting system involve the evaluation of compliance with Internal Revenue Service requirements and rulings concerning the retention of records stored on machine-sensible data media?  
 (a) Yes  (b) No

25. Which of the following auditing procedures and techniques are used by your firm as part of the study and evaluation of internal control in computer-based systems?

	Required	Optional	Never used	Don't know firm requirements
(a) Standard questionnaire for all audit engagements (manual and computerized systems) .....				
(b) Supplement to standard questionnaire (for use in computer-based systems) .....				
(c) Written description of accounting system .....				
(d) System flowcharts .....				
(e) Program flowcharts .....				
(f) Program test decks .....				
(g) Integrated test facility (ITF) or other techniques introducing selected test data into the accounting system simultaneously with genuine company data .				
(h) Audit, documentation and other software packages provided to clients by computer manufacturers ...				
(i) Generalized audit package (please specify) .....				
(j) Other audit procedures and techniques that your firm considers important in its study and evaluation of internal control in a computer-based system (please specify) .....				

26. Has your firm made any changes in its policy toward auditing financial statements produced in a computer-based accounting system as a result of the alleged insurance fraud case involving Equity Funding Corporation of America?

- \_\_\_ (a) Have not heard of case
- \_\_\_ (b) No, we are awaiting final outcome of pending litigation before further action is taken
- \_\_\_ (c) Yes, to the extent of informal suggestions and comments exchanged by firm personnel
- \_\_\_ (d) Yes, a committee has been established to study the audit implications but no recommendations have been made
- \_\_\_ (e) Yes, formal changes have been made and implemented
- \_\_\_ (f) Do not know firm reaction

If you selected response 'e', what is the nature of these changes?

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Please make any comments which you feel would be useful in the completion of this project.

## VITA

Steven Mark Flory was born in Roanoke, Virginia on January 23, 1946. His elementary and high school education was completed in the New Orleans, Louisiana, public schools in 1964. He majored in Economics at Louisiana State University, Baton Rouge, Louisiana, receiving his Bachelor of Science degree in 1968. While working on the undergraduate degree, he became a member of Phi Kappa Phi, Beta Gamma Sigma, Phi Eta Sigma, and Omicron Delta Epsilon. He received the Master of Science degree in Accounting from Louisiana State University in 1971. While working on the master's degree, he became a member of Beta Alpha Psi and served as a Graduate Assistant in Accounting. He worked for the certified public accounting firm of Arthur Andersen & Company from 1969 to 1970, receiving his CPA certificate in 1971. While working on his Doctor of Philosophy degree in Accounting, he served as a Graduate Teaching Assistant from 1971 to 1974. He is currently Assistant Professor of Accounting at the University of Alabama in Birmingham. He is a member of the American Institute of Certified Public Accountants, the American Accounting Association, the National Association of Accountants, and the Alabama Society of Certified Public Accountants.

**EXAMINATION AND THESIS REPORT**

Candidate: Steven Mark Flory

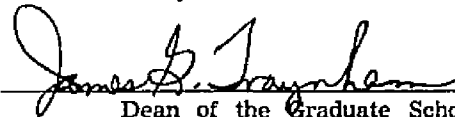
Major Field: Accounting

Title of Thesis: An Inquiry Into Selected Problems of Auditing Computer-Based Accounting Systems

Approved:

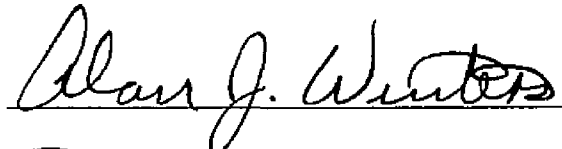


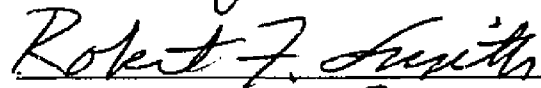
Major Professor and Chairman

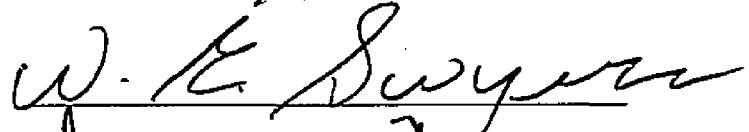


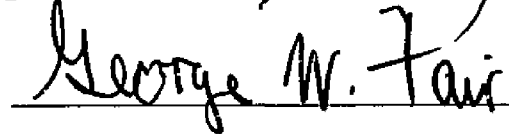
Dean of the Graduate School

**EXAMINING COMMITTEE:**









\_\_\_\_\_  
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Date of Examination:

April 30, 1976