
Financial Forensics II

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Forensic Accounting: Counterterrorism Weaponry 1
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May 2005
Volume 53
Number 3

United States
Department of Justice
Executive Office for
United States Attorneys
Office of Legal Education
Washington, DC
20535

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Director

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The United States Attorneys'
Bulletin is published pursuant to
28 CFR § 0.22(b).

The United States Attorneys'
Bulletin is published bi-monthly
by the Executive Office for United
States Attorneys, Office of Legal
Education, 1620 Pendleton Street,
Columbia, South Carolina 29201.

Periodical postage paid at
Washington, D.C. Postmaster:
Send address changes to Editor,
United States Attorneys' Bulletin,
Office of Legal Education, 1620
Pendleton Street, Columbia, South
Carolina 29201.

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Managing Editor, United States
Attorneys' Bulletin,
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Office of Legal Education,
1620 Pendleton Street,
Columbia, SC 29201.

Forensic Accounting: Counterterrorism Weaponry

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I. Introduction

This is the second of a two-part series that demonstrates how forensic accounting techniques fortify the identification, analysis, investigation and prosecution of terrorist and terrorist-related organizations. Note that the forensic accounting techniques discussed apply to virtually all matters containing a money laundering and/or phantom business element such as white collar crime.

This knowledge grows in importance as terrorist money laundering migrates from charitable organizations into legitimate and illegitimate businesses to avoid the increasing scrutiny of AUSAs.

II. Terrorist needs

Certain conditions are necessary for a terrorist to reside undetected in the United States. These conditions accommodate financial profiling much like behavioral profiling of serial killers. The conditions and their detection via forensic accounting are described in this article.

Effective employment of forensic accounting tools, in the financial profiling of terrorists, requires an acute grasp of the money flows that terrorists rely upon. Forensic accounting tools can be applied regardless of the source, disposition, or even the nature of the money flow. The tools are equally effective among all types of flows, including electronic transfers, checking accounts, credit cards, debit cards, traveler's checks,

purchase and sale invoices, payroll records, letters of credit, cash, and others.

The following discussion describes the nature of a terrorist's financial needs and outlines the likely sources and disposition of the money he acquires.

A. The common thread: money

Even terrorists have basic needs that must be met in order to execute their hideous schemes. These consist of, in descending order, physiological, communications, and mobility needs. Each of these basic needs requires money to fulfill.

Terrorists cannot effectively attack our society unless they use our society's methods. These methods typically leave financial trails that can be traced by forensic accounting back to the terrorists. Therefore, the better we understand how and where terrorists acquire and spend their money, the more effective we will become in defeating their efforts.

B. Physiological needs

Every human must have air, water, and food to survive. The human body can live about three to five minutes without air, about eight days without water, and about forty days without food before death occurs. In order to survive, the terrorist must breathe, drink, and eat so that his body will function when called upon. Air does not require a purchase, but purchases of water and food leave various trails of evidence. After the basic physiological needs are met, the terrorist also needs shelter, clothing, and personal hygiene items to avoid attracting undue attention. Acquisition of such items generates a trail of evidence that can be traced by forensic accounting analysis.

C. Communication needs

Communication needs are vital to a terrorist for three significant reasons. The most obvious reason is to coordinate with other terrorists in the execution of their schemes. Second, since several terrorists living together could attract attention, individual immersion in society is the most practical way to maintain a low profile. Therefore, periodic communication is necessary for planning. Finally, a less obvious need relates to a terrorist's persona. Specifically, he requires continual reinforcement by and with others sympathetic to his cause to insure that his commitment is maintained and strengthened.

Installed landline phones require deposits, identification, and related trail indicators. Therefore, they are often avoided. Coin-operated phones leave little evidence, but are inconvenient, provide little privacy, and leave a record of activities. Cellular phones can be purchased as throwaway units that preclude tracing except at the point of purchase and activation. Cellular phones have walkie-talkie and camera capabilities that are valuable to terrorists because of their mobility and multi-purpose functionality.

E-mail communications, typically in code, are often used by terrorists since they are readily made at many locations and they leave little trail evidence (except for the purchase of on-line time). E-mail also has limitations as it is not accessible at will. Mail communication is cost-effective but slow and leaves more trail than the terrorist desires, such as fingerprints, DNA, routing information, timing indications, and related data.

D. Mobility needs

Mobility needs are vital to a terrorist for two significant reasons. First, mobility enables a terrorist to make himself a moving target which, by definition, is more difficult to track. Second, a terrorist needs mobility in order to execute plans against targets of opportunity. Travel modes range from airline to public transportation. Automobile ownership and related requirements, such as a driver's license, complicate a terrorist's mobility since acquisition and operation of vehicles requires documentation providing evidence of activities. Therefore, a terrorist will minimize high-trail modes such as airline travel and maximize low-trail modes such as city bus routes.

E. Where did the 9/11 terrorists get and spend their money?

A summarized financial profile of the Pentagon/Twin Towers financial investigation indicates that the nineteen 9/11 hijackers opened twenty-four bank accounts at seven domestic banks, and twelve international bank accounts. Their deposits and disbursements totaled \$303,481 and \$303,671 respectively, and are categorized in Exhibits 1 and 2. ATF/FBI Joint Presentation, "Money Laundering & the Financing of Terrorism," American Institute of Certified Public Accountants' Annual Fraud & Litigation Conference, Sept. 26-29, 2004.

It is significant that the majority of their transactions for money inflows and outflows were composed of cash. Note that Exhibit 1 indicates that 47% of the funds that the 9/11 terrorists received was in the form of cash. Exhibit 2 illustrates that 42% of the terrorists' pre-9/11 expenditures occurred in the form of cash.

None of the hijackers had a valid or issued Social Security Number (SSN). The hijackers used foreign passports/visas from Saudi Arabia, United Arab Emirates (UAE), Germany, Egypt, and Lebanon to open bank accounts. Most of the checking accounts were opened with cash or cash equivalents (such as traveler's checks) in average amounts of \$3,000 to \$5,000. Some hijackers opened joint accounts and all accounts were accessible with debit cards.

The 9/11 hijackers returned all unused money to the terrorist network immediately before executing the attacks. Marwan Al-Shehhi wired \$5,400 from a Greyhound Station in Boston, Waleed Al-Shehri wired \$5,215 from Logan Airport in Boston, and Mohamed Atta wired \$2,860 and \$5,000 from two Laurel, Maryland grocery stores. Al-Shehhi and Al-Shehri sent their funds through the Al-Ansari Exchange and Atta sent his funds through the Wall Street Exchange, United Arab Emirates (UAE).

In contrast, the alleged twentieth hijacker, Zacarias Moussaoui, obtained his funding directly from the Al Qaeda network, while Ahmed Ressam, the Millennium bomber, obtained his funds through criminal activity.

F. Source of terrorist money

Generally, most terrorist money flows derive

from two primary sources: operating entities, legal and illegal, and individuals. In theory, legal operating entities tend to have more comprehensive and accessible record keeping systems than illegal operating entities. Forensic accounting tools, however, function regardless of the legality or extent of respective record keeping systems. Perhaps a more important distinction relates to whether the sources are sympathetic or unsympathetic to terrorists' causes. A sympathetic source is a party who supports the terrorist cause. An unsympathetic source could be an inner city homeless shelter that unwittingly meets a terrorist's survival needs. Forensic accounting tools and techniques function well regardless of the predisposition of the source or terminus of funds.

G. Critical success factors for terrorists

Based upon the preceding terrorist financial profile, certain factors are critical to a terrorist's existence. The factors are highlighted below in a descending hierarchy of priority and serve as markers in support of forensic accounting analysis.

First, terrorists must minimize the evidence trail. Their day-to-day existence, spanning their physiological, communication and mobility needs, must be met in a low-profile manner that minimizes evidence generation. In short, they should deal in cash as much as possible.

Second, when evidence generation is unavoidable they will use counterfeit identification before using legitimate, but easy to trace identification. For example, airline travel that requires identification may compel a terrorist to use legitimate foreign identification since counterfeit identification may raise red flags. Naturally, counterfeit identification is time-sensitive since it is most effective when newly obtained, before authorities have had a chance to begin focusing on it.

Third, from the terrorists' point of view, engaging in criminal activities to generate funds is undesirable and should be avoided. Criminal activities are avoided because such actions may draw undue attention and potential disruption to the terrorists' actions.

Fourth, terrorists will seek donations (money, goods, services) from parties sympathetic to their cause to minimize the generation of evidence. Cash receipts from sympathetic donors leave almost no evidence trail. Receipt of goods and services (such as food, shelter) from sympathetic donors leaves very little evidence trail. Still, a trail can be left from the donor source which, in turn, leads to the terrorist.

Fifth, money and/or goods and services can flow through sympathetic and/or unsympathetic parties consisting of operating entities and/or individuals. Regardless of the source, such activities leave some evidence that can be traced, directly and/or indirectly.

Sixth, if sympathetic parties are not available, terrorists will extract resources through coercion, such as threatening family members residing in the source's foreign country. Even this source may leave a trail of activities when a comparison of resource consumption (food, communications, shelter) indicates that the (unwilling) donor has consumed more resources than would otherwise be expected.

Seventh, a terrorist will strive to continually change his patterns to avoid generation of evidence and detection. Fortunately, human nature makes change an inherently difficult task and thus helps ensure that a trail of evidence is continually generated.

III. Financial statements—the sources of data

Virtually every business maintains some form of business activity record, whether for legitimate or illegitimate purposes. Therefore, even without a strong accounting system, internal controls, or even honest management, transactional activity can be used to construct financial statements that represent even the most clandestine of operations. Consequently, if a source of terrorist funding flows from an operating entity, e.g., a business, charitable organization, educational institution, governmental organization, or nongovernmental organization (NGO), forensic accounting tools and techniques can be used in the analysis.

Even the most basic financial statements can yield telling indicators when skilled analysis is applied to their composition. In order to provide a starting point for analysis, each of the basic financial statements found in a typical business is illustrated below, supported by examples and generally accepted accounting definitions, which are offered for reference.

A. Financial statements

"A financial statement is any report summarizing the financial condition or financial results of a person or organization on any date or for any period. Financial statements include the balance sheet and the income statement, and sometimes the statement of changes in financial position," currently identified as the cash flow statement. BLACK'S LAW DICTIONARY 631 (6th ed. 1990). In most businesses, only a balance sheet and income statement will be available and the cash flow statement must be constructed by the forensic accountant.

B. Balance sheet

"The balance sheet, sometimes called the statement of financial position, lists the company's assets, liabilities, and stockholders' equity (including dollar amounts) as of a specific moment in time." ROGER H. HERMANSON & JAMES DON EDWARDS, FINANCIAL ACCOUNTING: A BUSINESS PERSPECTIVE 20 (Irwin/McGraw-Hill 1998).

"Assets are probable future economic benefits obtained or controlled by a particular entity as a result of past transactions or events." FINANCIAL ACCOUNTING STANDARDS BOARD, CONCEPT STATEMENT NO. 6, ELEMENTS OF FINANCIAL STATEMENTS (1985). Assets are typically categorized into current, long-term, and other classifications, such as goodwill. Current assets include cash, accounts receivable, inventory, and prepaid items, and are typically liquidated within one year or less. Long-term assets include land, buildings, fixtures, and equipment and their related accumulated depreciation. Long-term assets are expected to last longer than one year and assets, such as goods, have an indefinite life.

"Liabilities are probable future sacrifices of economic benefits arising from present obligations of a particular entity to transfer assets or provide services to other entities in the future

as a result of past transactions or events." *Id.* Current liabilities include accounts payable, accrued expenses, lines of credit, and current portions of long-term debt and are typically liquidated within one year or less. Long-term liabilities include long-term debt and mortgages and are expected to last longer than one year. Other liabilities are seldom identified since they can consist of contingent liabilities such as pending lawsuits.

"Equity or net assets is the residual interest in the assets of an entity that remains after deducting its liabilities." *Id.* If liabilities exceed assets, a negative equity results and the entity is technically insolvent, depending upon other measures.

A hypothetical balance sheet for a business with attributes conducive to terrorist money laundering is shown at Exhibit 3. Exhibit 3 highlights the major components of the hypothetical balance sheet and thus establishes the starting point for financial analysis. A more apparent view is obtained by converting the data into a visual representation as illustrated at Exhibit 4. Exhibit 4 shows the total assets, total liabilities, and total equity contained in the balance sheet.

A comparison technique known as common-sizing is provided in Exhibit 5 which, in combination with the preceding exhibits, enables a forensic analyst to formulate observations of the key items as indicated. Common-sizing consists of converting all financial statement items to a percentage of assets and revenues for the balance sheet and income statement, respectively. Then, results are compared within and among one another over a multiperiod time horizon.

The common-sizing technique also accommodates a comparison to similar businesses that may be much larger or smaller than the subject under analysis. Bar graphs and line charts are useful to identify key variations warranting further investigation.

The data illustrated also supports other financial analysis methods such as vertical and horizontal analysis. Vertical analysis compares each key account category item within its respective fiscal period. Horizontal analysis compares key account categories, such as officer compensation, travel, and entertainment over a multiperiod time horizon to identify changes meriting further inquiry. The technique typically

includes percentage changes, dollar changes, comparison changes, and so forth.

The example balance sheet (Exhibit 3) and related visual and quantitative measures (Exhibits 4 and 5) indicate steadily growing assets driven primarily by growing cash balances, growing fixed asset balances, and steady nonoperating assets. The cash balances have resulted from stable revenues (Exhibits 6 and 7) and strong gross profit performance (Exhibit 8) while operating expenses have remained stable (Exhibits 6 and 8). Also, in comparison to the subject company's peer group (not shown for ease of illustration), the hypothetical balance sheet carries less accounts receivable than its competitors but employs substantially more fixed assets (Exhibits 3 and 5). Finally, the total current liabilities are proportionately larger than its competitors but its long-term debt is proportionally smaller than its competitors, resulting in lower total liabilities than its competitors (Exhibits 3 and 5). Generally, such indicators could point to money laundering since cash balances and fixed assets are growing even though accounts receivable balances are small and stable. Consequently, further investigation is warranted.

C. Income statement

The income statement, sometimes called an Earnings Statement or Profit and Loss (P&L) Statement, reports the profitability of a business organization for a stated period of time. In accounting, profitability is measured for a period by comparing the revenues generated with the expenses incurred to produce the revenues. HERMANSON, *supra* at 18. "Revenues are inflows or other enhancements of assets of an entity or settlements of its liabilities (or a combination of both) from delivering or producing goods, rendering services, or other activities that constitute the entity's ongoing major or central operations." *Id.*

Costs are sacrifices of assets that result in the generation of revenues. Costs in manufacturing operations are comprised of materials, labor, and overhead. Overhead is typically applied in some manner related to the operations of the business, such as labor hours, labor dollars, machine time,

and other techniques. Costs in retail operations are comprised of purchased merchandise.

"Expenses are period outflows or other using up of assets or incurrence of liabilities (or a combination of both) from delivering goods, rendering services, or carrying out other activities that constitute the entity's ongoing major or central operations." *Id.* They are typically categorized within classifications of sales, general, and administrative expenses.

A hypothetical income statement for a business with attributes conducive to terrorist money laundering is presented as Exhibit 6. This exhibit highlights the major components of the hypothetical income statement and establishes the starting point for forensic analysis in concert with the balance sheet. A more obvious depiction is obtained by converting the data into a visual representation as illustrated by Exhibit 7, which shows the revenues and gross profit contained in the income statement.

Finally, the common-sizing technique is provided in Exhibit 8, which in combination with the preceding exhibits, enables an analyst to make the observations of the key items as indicated.

The example income statement and related visual and quantitative measures indicate generally that the hypothetical income statement's revenue base has remained relatively flat since 1999. The no-growth scenario results from the company's respective industry-related economic downturn following the mid to late 1990s. Despite the flat revenues, the gross profit margin has remained healthy relative to its competitors, even with the 2003 decline. Consequently, the gross profit margin peaked at 70.8% in 2001 and troughed at 63.1% in 2003. Since this hypothetical service business (specialized freight-forwarding) operates in an industry notorious for aggressive price cutting, a relatively strong and stable gross profit margin during flat revenues is a flag meriting further investigation into money laundering.

D. Cash flow statement

The cash flow statement shows the cash inflows and cash outflows from operating,

investing, and financing activities. HERMANSON, *supra* at 20.

Operating activities include all transactions and other events that are not defined as investing or financing activities. Operating activities generally involve producing and delivering goods and providing services. Cash flows from operating activities are generally the cash effects of transactions and other events that enter into the determination of net income.

FINANCIAL ACCOUNTING STANDARDS BOARD, FINANCIAL ACCOUNTING STANDARD 95, STATEMENT OF CASH FLOWS (1987).

Investing activities include making and collecting loans and acquiring and disposing of debt or equity instruments and property, plant, and equipment and other productive assets, that is, assets held for or used in the production of goods or services by the enterprise (other than materials that are part of the enterprise's inventory).

Id.

"Financing activities include obtaining resources from owners and providing them with a return on, and a return of, their investment; borrowing money and repaying amounts borrowed, or otherwise settling the obligation; and obtaining and paying for other resources obtained from creditors on long-term credit." *Id.*

Note that the cash flow statement is perhaps the single most powerful forensic accounting tool to deploy in money laundering investigations. Certain critical transactions will show up nowhere else unless a cash flow statement is prepared, e.g., cash distributions to/infusions from owners and outside parties. Unfortunately, the cash flow statement is very "young" relative to the balance sheet and income statement.

The balance sheet and income statements can be traced to Luca Pacioli, a 15th century Franciscan Monk credited with formalizing the double-entry method of accounting in his 1494 treatise, *Summa de Arithmetica, Geometria, Proportioni et Proportionalita* (Everything About Arithmetic, Geometry and Proportion). It was written as a digest and guide to existing mathematical knowledge and bookkeeping was only one of five topics covered. The *Summa's* thirty-six short chapters on bookkeeping entitled *De Computis et Scripturis* (Of Reckonings and

Writings) were added in "order that the subjects of the most gracious Duke of Urbino may have complete instructions in the conduct of business," and to "give the trader without delay information as to his assets and liabilities." (All quotes from the translation by J.B. GEIJSBEEK, ANCIENT DOUBLE ENTRY BOOKKEEPING: LUCAS PACIOLI'S TREATISE (Published by the Author 1914)).

The cash flow statement was only recently mandated by the Financial Accounting Standards Board (FASB) in 1987. Therefore, the 500 year-old familiarity of the balance sheet and income statement stand in stark contrast to the mere eighteen year tenure of the cash flow statement. Simply put, even skilled accountants often lack a deep understanding of the cash flow statement's powerful capabilities and applications.

The cash flow statement is typically the most difficult statement for terrorist money launderers to manipulate since it begins and ends with cash. A hypothetical cash flow statement for a business with attributes conducive to terrorist money laundering is presented as Exhibit 9. This exhibit details the key components of the cash flow statement and enhances the starting point for operating analysis in concert with the balance sheet and income statement. Analysis is aided by converting the data into a visual representation, as illustrated in Exhibit 10, which depicts the operating, investing and financing flows contained with the cash flow statement. Exhibit 11 focuses on the operating cash flows and highlights a key forensic observation: operating cash flow is declining despite continual increases in cash balances and fixed asset balances as contained in Exhibits 3, 4 and 5. This condition merits further investigation.

IV. When financial statements contain laundered money

Certain types of businesses have characteristics that accommodate money laundering activities and they can be broadly categorized into the sale of products and the sale of services. It makes little difference whether the business is selling high-profit or low-profit products. Likewise, the products can be genuine or counterfeit.

There are four important business characteristics that are conducive to money laundering for terrorist purposes.

-
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- Businesses that sell consumer products.
 - Businesses with a commodity-type demand.
 - Businesses with low regulatory reporting requirements.
 - Businesses that deal in cash-based transactions.

These characteristics are common in the small-business culture of the United States' economy.

The types of businesses conducive to money laundering include clothing, cigarettes, perfumes, delicatessens, electronics, software, bakeries, restaurants, bars, bicycle repair, catering, and many others. Cash from sympathetic sources can be deposited along with the periodic deposits of an otherwise legitimate business. Fortunately, certain forensic accounting analysis can readily identify the result of terrorist deposits.

A primary forensic accounting test that highlights illicit deposits is known as the gross profit margin comparison test. This test calculates the gross profit margin of the respective business and compares it to two key benchmarks: its peer group and itself over time. If anomalies are identified, then further investigation can be initiated. The following graphs illustrate the annual gross profit margin for a hypothetical Middle East bakery.

Exhibit 12 measures the bakery's gross profit margin expressed as a percentage (gross profit/sales) against its peer group and itself (history) for the years 1998 through 2003. Exhibit 12 demonstrates that the bakery's gross profit margin exceeds the industry's gross profit margin, and likewise increased in the early years. The peer group data can be obtained from various sources or can be constructed on an ad hoc basis to serve as a benchmark. The percentage change in gross profit margin analysis shown in Exhibit 12 illustrates the significant change in gross profit margin coincident with and following the events of 9/11.

Exhibit 13 illustrates a more dramatic comparison resulting from applying the percentage change on a year-to-year basis. Exhibit 13 measures each individual year's increase or decline in gross margin as a percentage change

([2003 gross profit margin - 2002 gross profit margin]/2002 gross profit margin).

The gross profit margin comparison test is based upon laundered monies flowing through a business to the owners of the business, who then presumably direct the funds to their respective terrorist sources. The same test is used to determine when the business may have been used to direct the funds to terrorists. Example: when bogus payments are made to so-called vendors for merchandise, such as flour, that was never delivered to the bakery.

Exhibit 14 measures a different Middle East bakery's gross profit margin expressed as a percentage (gross profit/sales) against its peer group and itself (history) for the years 1998 through 2003. In this scenario, the bakery's gross profit margin fell below the industry's gross profit margin, and likewise decreased in the early years. Such a decrease in gross profit margin indicates that either revenues are not being reported or costs may be diverted to other purposes besides creating revenues. Either way, it is a tell-tale flag requiring deeper inquiry.

Exhibit 15 dramatizes the comparison set out in Exhibit 14 by showing the percentage change on a year-to-year basis.

Note that exhibits 13 and 15 illustrate the two different sides of the same coin. That is, Exhibit 13 illustrates a dramatic one-time (2001) increase in gross profit margin when compared to its own history and its peer group. A logical explanation is that more revenues flowed through the entity than could be explained by normal business fluctuation—a potential money laundering flag. Exhibit 15 illustrates a dramatic one-time increase (2002) with a corresponding decrease (2001) that could flag timing differences in revenues and/or costs. Both exhibits demonstrate cause for further investigation into money laundering.

As indicated by the preceding schedules, even simple tests such as the gross profit margin analysis comparison can identify and illustrate symptomatic indicators of money laundering for terrorist purposes.

V. When no records have been prepared by the terrorists

In virtually all cases, terrorists do not have any formalized records that could be used against them. However, transaction-generated evidence such as food purchases provides a rich collection of data which can be aggregated by forensic accounting analysis. The data will then be analyzed and used to form both direct and indirect conclusions regarding its nature. The types of forensic accounting analysis most likely applied in this scenario will consist of indirect methods such as the Modified Net Worth Method, and direct methods such as the expenditures statement.

A. The Modified Net Worth Method

The Modified Net Worth Method derives from the Net Worth Method long employed by the Internal Revenue Service (IRS). The most high-profile application of the Net Worth Method was used by Department of Treasury officials to help convict Alphonse "Al" Capone in *Capone v. United States*, 51 F.2d 609 (1931). Its acceptance by the courts has been well documented over the years.

In order to remove the complexities of income tax law, the Net Worth Method was modified and popularized in 1974 as the Modified Net Worth Method by Mr. Richard A. Nossen, a former IRS Special Agent. RICHARD A. NOSSEN & JOAN W. NORVELL, *THE DETECTION, INVESTIGATION, AND PROSECUTION OF FINANCIAL CRIMES* (Thoth Books, 2d ed. 1993). This technique is effective in demonstrating a terrorist's apparent income by determining the increase in his wealth, by deriving the year-to-year change in his overall net worth. Consequently, it can be shown that the terrorist spent more than he had available from known, reported, or legitimate sources.

For many years the courts have accepted this method to infer, as admissible circumstantial evidence, that any excess of expenditures was made with funds from unknown and/or illegitimate sources. Generally, the Modified Net Worth Method compares a year-end net worth estimate with a year-end net worth estimate from the preceding year, identifying an increase. Next living expenses are added to that amount and income from known sources is deducted from the subtotal. The residual identifies the expenditures

in excess of known sources of funds. The general format is depicted in Exhibit 16.

The Modified Net Worth Method is readily assembled from widely disparate evidence and records. Ordinarily the method is categorized by year, but it can also cover unusual time horizons to match pertinent statutory periods.

Exhibit 17 illustrates how the Modified Net Worth Method is used to demonstrate that the terrorist had unreported funds in this hypothetical example. The respective lines are individually described following the schedule.

B. The Source and Use of Cash Method

The Modified Net Worth Method can be useful when a terrorist acquires big-ticket items such as real estate, stocks and bonds, and tangible assets in general. Alternatively, a terrorist living a low-profile, transient existence would require a different analytical technique such as the Source and Use of Cash Method.

The Source and Use of Cash Method lists each identified source and use of cash (or other funds) by category for the respective years under analysis. As in the Modified Net Worth Method, the years can be constructed for annual or other periods. The results of each method are exactly the same and sometimes the two techniques are used in combination to corroborate findings. A hypothetical Source and Use of Cash Method is illustrated in Exhibit 18.

Exhibit 18 reflects the sources of cash attributed to the terrorist based upon the various records collected and seized in a raid by federal agents. Line 12 reflects the terrorist's estimated living expenses for the respective period as derived by adjusted third-party information sources such as the Consumer Expenditure Survey (CES) available at <http://www.bls.gov/cex/home.htm>. Since records were unavailable for living expenses (except in very scattered instances) and he refused to cooperate by describing his living patterns, the CES data was applied. Line 13 reflects the total expenditures for each respective year. Line 14 reflects the difference between the terrorist's expenditures and his claimed earnings, thus inferring that he has significant unknown and unreported sources of income. The total column aggregates the years to validate that the totals compare (\$168,162).

Certain observations between Exhibits 17 and 18 are significant. First, note that the results of the analysis are exactly the same for both methods (\$168,162). Since the data used for each method derives from the same source, no difference should result if the methods are properly executed. Second, despite disparate time periods (one thirty-two-month period for the Modified Net Worth Method, and four-odd years for the Source and Use of Cash Method), the results of the analysis are exactly the same for both methods, (\$168,162). Finally, note the Unknown section in Exhibit 18, which indicates that yearly categorization was simply not possible for many items, and not even required in aggregate.

VI. Summary of forensic accounting observations

Based upon the likely nature of terrorist activities, certain highlights regarding forensic accounting tools are summarized below.

A. Overall approach

Generally, the approach to forensic accounting analysis should be initiated with indirect methods that accommodate an exploratory manner so that scarce resources can be most effectively employed. That is, indirect methods can identify those areas offering promise in a manner comparable to exploratory surgery. After the promising areas are identified, direct methods can be employed.

B. Operating entities

Operating entities that provide financial statements, or for which financial statements have been prepared by the forensic analyst, exhibit certain key characteristics as follows.

A comparison of operating cash flow should be made to reported net income. Logically, operating cash flow should lag reported net income due to the accrual nature of Generally Accepted Accounting Principles (GAAP). Manipulated financial statements will exhibit operating cash flow that trends differently from reported net income.

Put another way, financial statements that comply with GAAP are prepared on an accrual, versus cash basis. Accrual-based financials report revenue and expenses as they are earned or incurred, whether or not they have been received or paid. Cash-basis financials, which, by definition do not comply with GAAP, report revenue and expenses only when cash is actually received or paid out. Accrual-based financial statements are the antithesis of cash-based financial statements.

Consequently, accrual-basis financials report net income before the commensurate cash is actually received. Logically, legitimate accrual based-financials will then show the statement of cash flow results lagging the income statement results. An obvious example is Enron, which reported enormous amounts of net income with relatively flat operating cash flow. Such anomaly is a clear flag for forensic accountants.

A sustainable growth rate should be calculated based upon reported net income and compared to actual growth. In manipulated financial statements, the actual growth rate will exceed the sustainable rate since illegitimate funds are flowing through the operation. Estimation of the sustainable growth rate can be achieved by applying the sustainable-growth model. IBBOTSON ASSOCIATES, STOCKS, BONDS, BILLS AND INFLATION, VALUATION EDITION 2002 YEARBOOK 62 (2002). This model relies on two accounting concepts: return on equity and the plow-back ratio. The equation follows:

$$Gs = Bs \times ROE$$

Gs = sustainable growth rate for a company,

Bs = plow-back ratio calculated as follows:

(Annual Earnings - Annual Dividends)/Annual Earnings; and

ROE = return on book equity as follows:

Annual Earnings/Book Value of Equity.

Use of independent parallel indicators can identify reporting anomalies. For example, in charitable organizations the development department, or equivalent, typically maintains a donor log, independent of management. Comparison of the logs' entries to the reported

donations can identify undesirable donors that require additional investigation.

More specifically, donor logs identify the parties responsible for individual sources of donation, i.e., cash, checks, credit cards, services, and others. Therefore, the logs can be compared in aggregate and individually to the financial reporting system to identify discrepancies, which can flag transactions meriting additional inquiry. Red flags might include the following:

- Mixing of disparate types of deposits such as combining cash, third-party checks, wire transfers, traveler's checks, and related items in a single deposit transaction.
- Large withdrawals from a business account not ordinarily associated with cash transactions.

C. Individual targets

Individual targets often exhibit behaviors that leave evidence, like those listed below, that can identify terrorist actions.

- Postal mailings can indicate shipments of cash outside the United States. Under current United States Postal Service (USPS) regulations, a letter-class mail parcel can weigh up to four pounds when mailed internationally, and up to sixty pounds when mailed to Canada. A single, four-pound letter-class parcel can accommodate about \$180,000 in \$100 bills while a sixty-pound letter-class parcel can handle about \$2,700,000 in \$100 bills.
- Deposits that are followed shortly by wire transfer of funds.
- Beneficiaries of mailings and transfers that reside in a problematic foreign jurisdiction.
- Lifestyles inconsistent with stated employment streams, such as irregular work habits, without commensurate financial challenges.
- Involvement with multiple individuals from the same country, some of whom exhibit the preceding characteristics.
- Inordinate or regular cell phone conversations and no installed landline.

VII. A forensic accounting methodology to support counterterrorism

Forensic accounting analysis in support of counterterrorism efforts must be conducted in a methodical manner consistent with the high standards of federal law enforcement. Therefore, a proposed forensic accounting methodology is described that meets such requirements. The methodology is perhaps the only one in place in the United States today that combines the criminal investigation process with forensic accounting methods and techniques.

The criminal investigative process employed is the seven step method popularized by Richard Nossen and is still taught to federal law enforcement agencies. The forensic accounting methods are those generally accepted techniques that support both civil and criminal expert witness analysis. RICHARD A. NOSSEN & JOAN W. NORVELL, *THE DETECTION, INVESTIGATION AND PROSECUTION OF FINANCIAL CRIMES* (2d ed. Thoth Books 1993).

A. Objectives of the methodology

There are seven primary objectives intended for the methodology.

- First, the methodology provides a "starting point" for the federal law enforcement profession to establish forensic accounting as its own discipline.
- Second, the methodology will serve as generalized and/or specific guidance to federal forensic accountants, thus insuring that ancillary disciplines are appropriately considered.
- Third, the methodology provides a framework through which forensic accounting techniques and methods can continually be refined.
- Fourth, the methodology serves as a technical reference to those performing forensic accounting services on a part-time basis.
- Fifth, the methodology insures consistency of forensic accounting delivery, thus enhancing the likelihood of successful prosecutions.
- Sixth, the methodology serves as a training tool for those entering the federal law enforcement profession.

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- Seventh, the methodology enhances expert witness and prosecution testimony credibility before triers of fact.

This article describes the proposed forensic accounting methodology that enables practitioners to immediately apply its concepts. In recognition of the investigatory nature of forensic accounting, the methodology is built upon an integrated dual foundation of forensic accounting and criminal investigation.

Many aspects of forensic accounting and related disciplines are referenced in the methodology. Most of the techniques will be familiar to practitioners but where practitioners lack familiarity, the methodology links relevant technical aspects.

The methodology's imbedded hyperlinks enable practitioners to readily access supporting documents to facilitate consistency and promote efficiency. Also, hyperlinks, discussed later in Section VII. C., to explanatory text further support a forensic accountant's need to apply methods beyond one's immediate skill set. Darrell Dorrell, *Deposition Matrix*, NATIONAL LITIGATION CONSULTANT'S REVIEW, Vol. 2, Issue 9 at 1 (2002).

B. Criminal investigation

The traditional Seven Steps of Criminal Investigation is a process commonly taught and applied by federal, state, and local law enforcement authorities. Many variations of the Seven-Step method are used by law enforcement authorities. Specifically, certain law enforcement agencies employ a three, four, or five-step criminal investigation process. However, the Seven-Step method is preferable due to its comprehensive detail. This customization capability enables forensic accounting practitioners to closely interface with respective law enforcement agencies, thus matching their approach when applying forensic accounting.

The methodology is detailed below and consists of numerous components of criminal investigation processes, forensic accounting techniques, statistical methods, interviewing schema, sociopsychological constructs, and adult-learning theories. Consequently, the

methodology offers a comprehensive and dynamic tool for analysis and evidentiary delivery.

C. The methodology in action—process map

The methodology is constructed as a process map that visually guides the practitioner through the logical actions of a forensic accounting assignment. The methodology starts at the earliest stage of an assignment and progresses through the final stage, typically testimony delivery pursuant to prosecution.

The process map flows left-to-right, top-to-bottom within the four phases and five stages, as shown in Exhibit 19. Therefore, a practitioner merely begins with the foundational (first) phase and progresses through the five stages where he then begins with the interpersonal (second) phase and again progresses through the five stages. Continuing in a like manner, the practitioner can address virtually every aspect of a forensic accounting assignment, whether complex or simple. Note the dotted line flow indicating that the methodology is not merely static but also reflects the dynamic nature of forensic accounting that often requires "looping" back through tasks as new data surfaces, as shown in Exhibits 20 through Exhibit 32, and highlighted in Exhibit 29.

Although the process map is visually self-explanatory, certain items require clarification. The language of forensic accounting can be applied to all types of investigative activities to clarify one's actions and findings, thus enhancing credibility during analysis, testimony, and prosecution. Forensic accounting techniques are readily applicable to nonfinancial data. In fact, most readers of this article have probably applied forensic accounting techniques to nonfinancial data without realizing it. An example would be comparing salesmen's reported call logs with customer sales.

Other industry specific examples are commonly found. Note that physicians' appointment logs are often compared to billing and deposits to identify anomalies. Likewise, deliveries of sugar and flour (measured in pounds) can be compared to the output captured in a bakery's cash register receipts. Also, fund raising

donor logs of charities can be compared to reported receipts of goods and services. Finally, the IRS has been known to compare the towel laundry bills of a suspected brothel to its reported income.

The actual methodology, contained in Microsoft® Power Point®, includes hyperlinked forms (e.g., Microsoft® Word®, Microsoft® Excel®, etc.) so that a user can immediately access and apply the tools to the assignment at hand. Due to size limitations of this article, not all the contents have been included, but the methodology is sufficiently populated to illustrate its intent and capabilities. Law enforcement agencies can obtain, free of charge, an electronic version of the methodology by contacting the authors. Also, www.aslet.org, <http://www.crimelineonline.com> and www.patc.com are other sources where some ancillary material can be purchased.

Due to the two-dimensional nature of the written word, the process map appears sequential. However, the methodology is intended to be flexible, dynamic, integrated and simultaneous, and/or iterative, thus mirroring how information and conclusions develop. For example, interviews and/or interrogations might not be conducted until rather late in a forensic assignment.

D. Methodology and linkage to criminal investigation

The methodology was constructed using a forensic accounting/investigative linkage to the Seven-Step Criminal Investigation methodology. The Seven-Step methodology is summarized below, and the respective identifiers are provided with links to the detailed matrix.

Matrix

Investigatory Steps Identifier

1. Interviews and Interrogation	I&I
2. Background Research	BR
3. Electronic and Physical Surveillance	EP
4. Confidential Informants	CI
5. Undercover	UC
6. Laboratory Analysis	LA
7. Analysis of Transactions	AT

Interviews and Interrogation (I&I) reflect the personal aspect of data-gathering, obtained through personal interviews and interrogation under law enforcement authority. It is generally considered a source of primary data.

Background Research (BR) is comprised of two broad categories: primary data and secondary data. Primary data (see Interviews) is acquired by the practitioner's efforts collecting data otherwise unavailable through secondary sources. Examples include performing an NCIC database query, or performing an Internet inquiry into a subject's asset holdings.

Electronic and Physical Surveillance (EP) is used to obtain evidentiary data through observation.

Confidential Informants (CI) provide information that is considered primary data. This may include paid or voluntary informants.

Undercover (UC) is used to obtain first-hand subject data.

Laboratory Analysis (LA) can range from statistical analysis, such as duplicate-numbers test, to scientific analysis, e.g., ink composition, to a wide range of investigatory procedures.

Analysis of Transaction (AT) compares/contrasts transactional and pattern-sensitive data measures to provide a record for forensic analysis. Full and false inclusion tests are used to determine the appropriate "universe" of data under investigation. This ensures that no extraneous data is included and that no appropriate data is excluded.

E. The four phases

The methodology is structured within a process map organized into four logically-flowing phases covering thirteen actions, with each action comprising five stages. See Exhibit 19. The thirteen actions are executed throughout the process and contain many distinct techniques that closely track the Seven-Step Criminal Investigation methodology. The phases, actions, and stages mirror the activities ordinarily encountered in the forensic accounting investigation process and are indicated below.

The foundational phase consists of assembling and preparing baseline data that will support and drive the investigation. The output must be continuously updated to provide a current record

and status of the progress of the investigation. Identification of all the bank accounts that may contain large wire transfers to offshore accounts would fall within this phase. The accounts would have been identified within the full and false inclusion test to ensure that all relevant data is examined. The two actions in the foundational phase include assignment development and scoping, which is an allocation of responsibilities. *See* Exhibits 20 and 21.

The interpersonal communications phase consists of interviews and interrogation, surveillance, undercover work, and the related activities necessary to extract pertinent information about the subject(s). The typical activities conducted by field officers would fall within this phase. A reasonably strong experience base is necessary in order to identify the individual traits, habits, and characteristics that betray a subject's deceptions. The two actions in this phase include interviews and interrogations and background research. *See* Exhibits 22 and 23.

The data collection and analysis phase consists of applying the various indirect quantitative and qualitative data obtained during the earlier phases and developing output supporting observations, thus arriving at an appropriate conclusion(s). If such efforts prove inconclusive, the next segment of this phase (discussed below)—direct analytical and conclusion phase, will provide additional evidence. Therefore, this phase consists of two sub-phases, i.e. indirect (executed first as a diagnostic and/or exploratory tool), and then direct, so that the labor-intensive efforts are most effectively applied. For example, by comparing the year-to-year change in equity to the year-to-year difference between revenues (i.e., receipts) and expenses, the articulation of the financial statements can be tested. Any difference is investigated to determine whether it is merely an equity transaction (capital infusion), or is determined to be unaccounted for revenue or expense. This technique is known as the Modified Net Worth Method, described in Section V., Subsection A.

Direct quantitative and qualitative analysis can follow the preceding indirect activities, or be executed either jointly with, or independent of

them. The evidence provided by this phase is, by definition, the most comprehensive but is not necessary in every case. Also, since it is usually quite labor-intensive, it can require the highest resource usage. The six actions in this phase include data collection, surveillance, confidential informants, undercover work, laboratory analysis, and analysis of transactions. *See* Exhibits 24 through 29.

The trial phase consists of delivering the results of the forensic accounting analysis. The typical delivery target is comprised of a trier of fact, (a judge and/or jury) that deliberates the evidence within the context of the law and other evidence. This phase also includes a postassignment activity that is intended to capture benefits of the experiential process achieved from each assignment. The three actions in this phase include trial preparation, testimony and exhibits, and postassignment activity. *See* Exhibits 30 through 32.

F. The thirteen actions

The assignment development action is the front end of a forensic assignment that shapes the context and defines the framework of the assignment.

The scoping action secures formal commitments and defines responsibilities among the parties with (and against) whom the forensic accountant is employed.

The interviews and interrogation action consists of the face-to-face contact with key parties. These activities often comprise the most compelling but nonquantitative evidence and can derive from actions ranging from conversations through depositions. This action can also be a reentry point in the process, such as an admission-seeking interview conducted toward the end of an investigation.

The background research action permits independent verification against the oral claims made by the respective parties.

The data collection action is the entry point for several other stages and likewise reflects the reentry when necessary.

The surveillance action collects and categorizes data ranging from objective indicators such as the number of phone calls through more subjective indicators such as behavioral symptoms.

The confidential informants action accesses parties willing to divulge data for their own reasons and often opens doors to other evidence.

The undercover action is a ruse used to gain confidences in order to obtain data otherwise unavailable. It is sometimes irreplaceable, such as in drug cases.

The laboratory analysis action can range from statistical to chemical techniques that determine whether or not data converts to evidence.

The analysis of transactions action contains obvious efforts, such as tracing the evidence back to a source. However, it can also include less obvious actions, such as establishing behavioral patterns that demonstrate trends.

The trial preparation action is comprised of preemployment preparation, thus simulating the trial testimony and insuring accuracy of content.

The testimony and exhibits action is the crucible within forensic accounting, and perhaps carries more weight than all the other stages combined. That is, even with superb foundational analysis it may all be for naught if direct testimony is poorly delivered or if withering cross-examination succeeds in diminishing the forensic accountant's opinions.

The postassignment action recommends that each assignment should have a postmortem lessons learned review to capitalize on the experiences, whether favorable or disastrous.

The four phases and thirteen actions, within the context of the five stages, are depicted in Exhibits 20 through 32 and are described in summary fashion below. Note that the methodology is constructed in an electronic, interactive format accommodating hyperlinked explanations that cannot be reproduced within the static pages of this Bulletin's text. Therefore, the explanation is reproduced following the respective phases of methodology.

Exhibit: 20
Phase: Foundational
Action: Assignment Development

Summary: This is the starting point for the methodology and clarifies the overall intent within the context of the assignment. Its formalized nature mirrors military mission planning, thus enhancing the likelihood of success within the resources available.

Exhibit: 21
Phase: Foundational
Action: Scoping

Summary: This is a reality check that balances expectations with constraints and reminds the participants of the ultimate output that may apply, thus establishing outcome-based efforts.

Exhibit: 22
Phase: Interpersonal
Action: Interviews & Interrogation

Summary: This encourages interviewers and interrogators to hone their skills, recognizing that even very experienced parties can always learn new methods and techniques. Likewise it enables less experienced parties to access the resources they need to enhance their effectiveness.

Exhibit: 23
Phase: Interpersonal
Action: Background Research

Summary: Background research is sometimes overlooked in the rush to proceed, but the formalization of this as a task ensures that readily available information is utilized as necessary.

Exhibit: 24
Phase: Data Collection and Analysis
Action: Data Collection

Summary: Output examples are used to inform all parties on the project of the expectations, thus insuring focused efforts.

Exhibit: 25
Phase: Data Collection and Analysis
Action: Surveillance – Electronic, Physical

Summary: Surveillance activities are most productive when deployed consistent with the

team's overall goals and objectives.

Exhibit: 26
Phase: Data Collection and Analysis
Action: Confidential Informants

Summary: Informants are most effectively deployed when they are directed to seek information in direct support of the team's efforts.

Exhibit: 27
Phase: Data Collection and Analysis
Action: Undercover

Summary: In a manner similar to surveillance, undercover activities are most productive when deployed consistent with the team's overall goals and objectives.

Exhibit: 28
Phase: Data Collection and Analysis
Action: Laboratory Analysis

Summary: Laboratory analysis can span the gamut of forensic analysis, including scientific, financial, psychological, biological, chemical and related topical subjects.

Exhibit: 29
Phase: Data Collection and Analysis
Action: Analysis of Transactions

Summary: This action pulls together all the preceding data collection and analysis, and coalesces it within the context of the goals and objectives. Note also that it may be a logical point at which to "loop back" to another, earlier task to continue polishing and refining the evidence.

Exhibit: 30
Phase: Trial
Action: Trial Preparation

Summary: This action insures that months or years of effort are effectively arrayed in order to maximize the prospects of obtaining a successful outcome.

Exhibit: 31
Phase: Trial
Action: Testimony & Exhibits

Summary: This is the last opportunity for the testifiers (experts and fact witnesses) to hone the delivery of their findings and opinions.

Exhibit: 32
Phase: Post-Trial
Action: Post-Assignment

Summary: This "lessons learned" activity is perhaps the most overlooked of all prosecution efforts. However, it may also offer the greatest benefit to the team since virtually every prosecution has something which improves the overall capabilities of the team.

G. The five stages

There are five foundational stages supporting the Seven-Step Criminal Investigation methodology described above. These stages mirror the activities ordinarily encountered in the investigation process and are indicated below.

The purpose stage establishes the reasoning behind the necessity of the phase and its respective actions. Put another way, it shapes the context and defines the framework to ensure that the actions are properly focused.

The references stage lists key technical references for the pertinent phase and its respective actions. Naturally, the reference sources will vary. For example, an excellent starting point for any forensic accounting matter is ROMAN L. WEIL, MICHAEL J. WAGNER & PETER B. FRANK, LITIGATION SERVICES HANDBOOK THE ROLE OF THE FINANCIAL EXPERT (3d ed. John Wiley & Sons 2001). However, forensic accountants often need detail beyond the capabilities of the HANDBOOK. Therefore, references should be considered as matter-specific. In its electronic form, the methodology is hyperlinked to specific references and Internet URLs for further investigation.

The tasks to be performed stage identifies key tasks that pertain within the context of the phase and its respective actions. Many tasks are linked

to the narrative matrix following the Process Map in order to define and describe a generic set of activities. In its electronic form the Methodology is hyperlinked to the narrative matrix for easy reference to the pertinent activities.

The potential issues stage alerts the forensic accountant to the land mines of the respective matter. For example, during the interviews and interrogation action the veracity of the respective party(ies) can never be taken for granted.

The deliverables stage suggests likely outputs that document the results throughout the Methodology's Process Map. Such outputs can be merely documentary but are likely to be eventually applied as exhibits in support of testimony. In its electronic form the Methodology is hyperlinked to the respective documents immediate application to the pertinent activities. The deliverables are incorporated into the testimony and exhibits action since they are typically applied during trial.

The Forensic Accounting Methodology is presented in all four phases, thirteen actions and five stages, in exhibits 20 through 37. After the entire Forensic Accounting Methodology Process Map is displayed, the selected textual narrative provides specific aspects of the proposed forensic accounting techniques, e.g., full-and-false inclusion. *See* Exhibits 20 through 37.

pages 17-48 deleted in PDF copy; click on exhibit links in documents to view the exhibits that were on those pages.

VIII. Conclusion

Forensic accounting, like most professional disciplines, is part art and part science. Therefore, it is most effective when applied in a methodical manner that considers all issues and alternatives, yet accommodates flexibility. This concept is what makes highly skilled professionals such as law enforcement, special operations military teams, and others so effective. They are so well trained that they know when and how to depart from the plan.

The extant methodology is the only known technique that simultaneously combines forensic accounting with criminal investigation. Therefore, it enhances law enforcement's technical skills in the pursuit of their prosecutions.

Exhibit 33

Forensic Technique	Definition/Description	Data Collection					Data Analysis	
		I&I	BR	EP	CU	UC	LA	AT
<p>Foundational Phase: This phase consists of assembling and preparing baseline output that will support and drive the investigation. The output will be continuously updated to provide a current record and status of the progress of the investigation.</p>								
Full-and-False Inclusion	<p>Full-and-False Inclusion tests are used to determine the appropriate universe of data under investigation. This ensures that no extraneous data is included, and that no appropriate data is excluded. These types of tests are particularly useful for finding unreported assets. Also, this technique can/should be used throughout the various stages.</p>	X	X	X	X	X	X	X
Genogram	<p>A Genogram is a visual representation of the myriad of information gathered during background research, interviews, and surveillance. It is often prepared in conjunction with events analysis output. It provides a common perspective for the forensic investigator to demonstrate patterns of behavior and identify other entities and parties meriting further investigation. Also, it can point to key indicators of the subject's behavior, leading to additional points of investigation.</p>	X	X	X	X	X		

Exhibit 33

Forensic Technique	Definition/Description	Data Collection					Data Analysis	
		I&I	BR	EP	CU	UC	LA	AT
Entity(ies)/Party(ies) Chart	An Entity(ies)/Party(ies) Chart is a visual representation depicting entity(ies) or party(ies) identification, and the associations among them. It is often prepared in conjunction with events analysis output. Entity(ies)/Party(ies) charts can be useful predictors of funds diversion. For example, identifying the formation date of an off-shore entity may be compared to funds decline, thus substantiating diversion. Also, identifying seemingly unrelated parties can indicate where further investigation is potentially warranted.	X	X	X	X	X		
Background Investigation	First, Background Investigation involves research (typically electronic, but also surveillance) into a party's identity to identify other assets that may have been forgotten. The results are continuously updated to provide a comprehensive record of information about the target.	X	X	X	X	X		

Exhibit 34

Forensic Technique	Definition/Description	Data Collection					Data Analysis	
		I&I	BR	EP	CU	UC	LA	AT
Interpersonal Communications Phase:		This phase consists of interviews, interrogation, surveillance, undercover, and the related activities necessary to extract pertinent information from/about the entity(ies)/party(ies).						
Distance Communication	<p>Distance Communication (or proxemic communication) consists of comparing and contrasting the interpersonal distance involved in query responses.</p> <p>It has been suggested that (even subtle) movements away from an interviewer indicate avoidance, and thus merit additional investigation. Movements toward an interviewer can suggest a desire to be believed and/or a desire for assistance, such as a request for the interviewer to delve further into the matter.</p> <p>Note that cultural differences have a significant impact on interpersonal distance. For example, the socially acceptable distance in the United States when two adults are communicating (while standing) is eighteen to twenty-four inches. European norms are much closer.</p>	X					X	X

Exhibit 34

Forensic Technique	Definition/Description	Data Collection					Data Analysis	
		I&I	BR	EP	CU	UC	LA	AT
Kinetic Communication	<p>Kinetic Communication consists of observing bodily reactions to determine where additional investigation is warranted.</p> <p>It has been suggested that a person who averts his eyes to the left prior to responding may be lying. Alternatively, it has been suggested that a person who averts his eyes to the right prior to responding may be recalling a memory. For example, it is well documented that when lying (and when passionate about a subject), blood flow increases to the subject's head and neck area, thus providing a flush that may warrant further investigation.</p>	X					X	X
Paralinguistic Communication	<p>Paralinguistic Communication consists of analyzing the volume, pitch, and voice quality during verbal communication. Oral communication provides for a range of nonverbal accompaniment that can be used to convey certain emotions which may not be as easily discerned in written communication.</p>	X					X	X
Expectations-based Statement Analysis	<p>Expectations-based Statement Analysis consists of analyzing the language used by subject during interviews to assess his truthfulness.</p> <p>For example, the reply "I don't remember" may require further investigation while the reply "I don't know" may indicate that no further inquiry is necessary.</p>				X	X	X	

Exhibit 35

Forensic Technique	Definition/Description	Data Collection					Data Analysis	
		I&I	BR	EP	CU	UC	LA	AT
Data Collection and Analysis (Indirect) Phase:		This phase consists of applying the various indirect quantitative and qualitative data obtained during the earlier phases and developing output supporting observations, thus arriving at an appropriate conclusion(s). If such efforts prove inconclusive, the next phase—Direct Analytical and Conclusion Phase will provide additional evidence.						
Records-based Expectations	Records-based Expectations consist of identifying the nature, form, extent, veracity, availability, and related elements of recordkeeping in order to set expectations about the entity(ies)/party(ies). For example, an entity handling a large sum of money from numerous investors would be expected, at a minimum, to have in place very sound management and internal controls that provide solid foundation to the representative financial statements. Examples of the minimum types of records in such a case include the general ledger, receipts ledger, cost and expense ledgers, detailed shareholder records, comprehensive financial statements, current income tax returns, and related elements.	X	X	X			X	X

Exhibit 35

Forensic Technique	Definition/Description	Data Collection					Data Analysis	
		I&I	BR	EP	CU	UC	LA	AT
Common-sizing	Common-sizing consists of converting all financial statement items to a percentage of revenue and assets, and then comparing the results within and among one another over a multiperiod time horizon. This method also accommodates a comparison to similar businesses that may be of much different size. Bar graphs and line charts are useful to identify key variations warranting further investigation.		X				X	X
Horizontal Analysis	Horizontal Analysis consists of comparing key account categories, such as officer compensation, travel, and entertainment over a multiperiod (e.g., year, quarter, month, day) time horizon to identify changes meriting further investigation. The technique typically includes percentage changes, dollar changes, comparison changes, etc. Also, bar graphs and line charts are useful to identify key variations warranting further investigation.	X					X	X
Reasonableness Testing	In Reasonableness Testing, the forensic investigator formulates an expectation, (i.e. estimate) of an account balance based upon understanding and assumptions driving the account balance. For example, a reasonableness test of deposits could measure the actual deposits against the expected deposits and could identify where further investigation is warranted.				X		X	X

Exhibit 36

Forensic Technique	Definition/Description	Data Collection					Data Analysis	
		I&I	BR	EP	CU	UC	LA	AT
<p>Data Collection and Analysis (Direct) Phase: This phase can follow the Indirect Phase, or be executed either jointly with, or independent of, the Indirect Phase. The evidence provided by the phase is by definition the most comprehensive, but is not necessary in every case.</p>								
Benford's Law	<p>Benford's Law is a financial DNA-equivalent technique developed during the 1920s by Frank Benford, a physicist at General Electric research laboratories. He noted that the first few pages of logarithm table books were more worn than the later pages. In those days, logarithm table books were used to accelerate the process of multiplying two large numbers by summing the log of each number and then referring to the table for the requisite integer.</p> <p>Benford's Law states that digits and digit sequences in a dataset follow a predictable pattern. The technique applies a data analysis method that identifies possible errors, potential fraud or other irregularities. For example, if artificial values are present in a dataset the distribution of the digits in the dataset will likely exhibit a different shape (when viewed graphically), than the shape predicted by Benford's law.</p>						X	X
Statement Analysis (Written)	<p>In Statement Analysis (Written) investigators examine written documents in a manner similar to the Statement Analysis (Verbal) as</p>						X	X

Exhibit 36

Forensic Technique	Definition/Description	Data Collection					Data Analysis	
		I&I	BR	EP	CU	UC	LA	AT
	described above. However, when analyzing written documents focus on the words and the nature of the document, including the age, condition, and related physical document factors.							
Accept-Reject testing	Accept-Reject Testing is similar to sampling but differs since sampling involves the projection of a misstatement.							
Stratified Mean Per Unit (MPU)	<p>A Stratified Mean-Per-Unit (MPU) technique can improve the precision of the mean-per-unit technique without increasing the sample size. The technique uses stratification of the population and samples each stratum separately.</p> <p>By stratification, the forensic investigator segments the population into groups of items exhibiting similar value amounts.</p> <p>Once mean and standard error in each stratum are calculated, the results are combined for the individual strata to create an overall estimate. The first few strata reduce the necessary sample size, but diminishing returns and certain other factors result in from three to ten strata as sufficient in many cases.</p>						X	X

Exhibit 36

Forensic Technique	Definition/Description	Data Collection					Data Analysis	
		I&I	BR	EP	CU	UC	LA	AT
Attributes Sampling	<p>Attributes Sampling is used to specifically identify occurrences that fall within and/or outside of previously established norms. It can be applied either globally and/or statistically using sampling techniques.</p> <p>Its most common use in forensic investigation is to test the rate of deviation from a prescribed (or expected) control perspective to support the forensic investigator's assessed level of assurance.</p> <p>In attributes sampling each occurrence of, or deviation from, a prescribed control perspective is given equal weight in the sample evaluation, regardless of the dollar amount of the transactions.</p> <p>In addition to tests of controls, attributes sampling may be used for substantive procedures, such as tests for underrecording interbank cash transfers or demand deposit accounts.</p> <p>However, if the audit objective is to obtain evidence directly about a monetary amount being examined, the forensic investigator generally designs a variables sampling application. Substantive tests consist of tests of details of account balances and related transactions, and analytical procedures. They are intended to gather evidence regarding the validity/appropriateness of the treatment of transactions. Generally, such tests are performed in combination during investigation.</p>						X	X

Exhibit 36

Forensic Technique	Definition/Description	Data Collection					Data Analysis	
		I&I	BR	EP	CU	UC	LA	AT
Ratio Estimation or Extrapolation	Ratio Estimation (sometimes Extrapolation) is often used in connection with variables sampling and can estimate (on a statistically significant basis) the projected results based upon analytical sampling via Probability-Proportional-to-Size Sampling.						X	X
Reperform	The forensic investigator may Repperform, sometimes on a test basis, procedures performed by employees, primarily to determine that a transaction was accurately recorded. Reperformance of computations, such as a bank reconciliation, also provides some assurance about the existence of the account balance, and solidifies a reference point for further investigation. If judgment drives the basis of a computation, such as in the valuation of accounts receivable, the forensic investigator reperforming the computation also should understand, evaluate, and apply the reasoning process underlying the judgment.						X	X

Exhibit 36

Forensic Technique	Definition/Description	Data Collection					Data Analysis	
		I&I	BR	EP	CU	UC	LA	AT
Reverse Proof	<p>This examination of forensic investigation matters is approached from two perspectives: that a fraud (or other deceit) has occurred, the proof must include attempts to prove it has not occurred, and that a fraud has not occurred, that proof must also attempt to prove it has occurred.</p> <p>The reason for reverse proof is that both sides of fraud must be examined. Under the law, proof of fraud must preclude any explanation other than guilt.</p>						X	X

Exhibit 37

Trial Phase: This phase is perhaps the most critical and is highly experience dependent. One example of an actual (blinded and redacted) trial exhibit follows in order to provide the practitioner with illustrations of exhibits that have proven successful.

	The following example "Expectations Attributes" table has been successfully used in a wide variety of civil and criminal matters. It illustrates the gap between expected financial circumstances such as management involvement and the actual in-place conditions (indicated by bold text) that may be found during investigation. It is only one of numerous examples of trial exhibits that can be made available to the reader in order to "jump start" ideas for trial.							
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[Click here for rest of exhibit](#)

Exhibit 37

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Notes



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