ENVIRONMENTAL LAW INSTITUTE
RESEARCH REPORT

From Pens to Bytes: Summaries of Court Decisions Related to Electronic Reporting

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FROM PENS TO BYTES: SUMMARIES OF COURT DECISIONS RELATED TO ELECTRONIC REPORTING

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SUMMARIES OF COURT DECISIONS RELATED TO ELECTRONIC REPORTING

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I. *ENVIRONMENTAL CASES BASED ON PAPER REPORTS*

A. *United States v. Sinskey*, 119 F.3d 712, 27 ELR 21468 (8th Cir. 1997).

1. Holding: The defendants' convictions of criminal violations of the Clean Water Act are valid. The government did not have to prove that the defendants knew their acts were illegal, but only that they knew of their relevant conduct. Also, "secret" discharge logs were admissible; the evidence was sufficient to support the convictions; and jury instructions cured a prosecutor's erroneous statement during closing argument.

2. Law involved: A jury found Sinskey guilty of 11 of the 30 counts with which he was charged and Kumm guilty of one of the 17 counts with which he was charged. The jury found both defendants guilty of knowingly rendering inaccurate a monitoring method required to be maintained under the Clean Water Act, in violation of 33 U.S.C. §1319(c)(4). Sinskey was found guilty of knowingly discharging a pollutant into waters of the United States in amounts exceeding CWA permit limitations in violation of 33 U.S.C. §1319(c)(2)(A).

3. Facts: Defendants were the plant manager and plant engineer at John Morrell & Co. (Morrell), a large meat-packing plant. The meat-packing process created a large amount of wastewater, some of which Morrell piped to a municipal treatment plant and the rest of which it treated at its own wastewater treatment plant. After treating wastewater Morrell would discharge it into the Big Sioux River. The company's permit set ammonia nitrogen levels and required it to perform tests weekly to monitor the ammonia nitrogen in the discharged water and to file monthly reports with EPA.

   In spring 1991, Morrell doubled the number of hogs that it slaughtered and processed at the plant. The increase in wastewater

caused the level of ammonia nitrate in the discharged water to be above that allowed by the permit. The defendants manipulated the testing process so that Morrell would appear not to violate its permit. In the "flow game," Morrell would discharge extremely low levels of water (and thus low levels of ammonia nitrogen) early in the week, when the required tests would be performed. After the tests had been performed, Morrell would discharge a high level of water (and high levels of ammonia nitrogen) later in the week. In addition to manipulating the flow, defendants engaged in "selective sampling": they performed more than the number of tests required, but reported only tests showing acceptable levels of ammonia nitrogen. When manipulating the flow and selective sampling failed to yield the required number of tests showing acceptable levels, the two simply falsified the test results and the monthly reports, which were then signed and sent to EPA.

4. Argument re jury instruction: The trial court gave an instruction that in order for the jury to find Sinskey guilty of acting "knowingly," the government had to show that he was "aware of the nature of his acts, perform[ed] them intentionally, and [did] not act or fail to act through ignorance, mistake, or accident." The instructions told the jury that the government was not required to prove that Sinskey knew that his acts violated the Clean Water Act or permits issued under the Act. Sinskey contested these instructions as applied to 33 U.S.C. § 1319(c)(2)(A), arguing that because the adverb "knowingly" immediately precedes the verb "violates," the government must prove that he knew that his conduct violated either the Act or the NPDES permit.

   The court disagreed. Its rationale is based on the generally accepted construction of the word "knowingly" in criminal statutes, the CWA's legislative history, and decisions of other courts of appeals that have addressed this issue. In construing other statutes in which one provision punishes the "knowing violation" of another provision that defines the illegal conduct, the court notes it has held that the word "knowingly" modifies the acts constituting the underlying conduct. Decisions of the only other appellate courts to analyze this issue support the court's decision.

5. Admissibility of evidence: Sinskey argues that the trial court abused its discretion by admitting into evidence Milbauer's "secret

logs." These "secret logs" were notes that Milbauer recording the levels of ammonia nitrogen being discharged. His rationale is that the logs constituted expert scientific evidence that did not meet the threshold standards of accuracy and reliability. Sinskey appears not to contest the accuracy or reliability of the means of testing ammonia nitrogen levels that Milbauer used; rather, he attacks the manner in which Milbauer used the probe, arguing that deviations from the standard protocol rendered his results unreliable. The court finds no error; the government testimony tended to show that the deviations did not affect reliability of the test results. Admitting the logs and allowing the jury to consider the deviations was within the trial court's discretion.

B. *United States v. Brittain*, 931 F.2d 1413, 21 ELR 21092 (10th Cir. 1991).

1. Holding: False statements made at the direction of the city public utilities director regarding a wastewater treatment plant's pollution discharge monitoring reports (DMRs) had a tendency to influence or were capable of influencing EPA enforcement action and thus were "material."

2. Laws involved: 18 U.S.C. §1001 (falsely reporting material fact to government agency); 33 U.S.C. §1311(a) and §1319(c)(1) (discharging pollutants into waters of United States).

3. Facts: The defendant, as public utilities director for Enid, Oklahoma, had supervisory authority over operations of the Enid wastewater treatment plant and was responsible for filing the plant's DMRs. Defendant directed the plant supervisor to falsify 18 monthly DMRs and supporting laboratory records by recording 25-30 milligrams/liter of effluent for two pollutants regardless of the actual measurements at the point of discharge. Defendant was convicted of a felony under 18 U.S.C. §1001 for falsely reporting a material fact to a government agency.

4. Analysis re materiality: The defendant conceded that there was sufficient evidence on all elements of §1001 except materiality. A false statement is material if it "has a natural tendency to influence, or [is] capable of influencing, the decision of the tribunal in making a determination required to be made." Defendant contended that the government did not demonstrate that his false statements were

capable of influencing government action. He relied on a plant laboratory technician's personal diary offered by the government; the diary showed that actual pollutant discharge levels were below the falsely reported levels and within the facility's NPDES permit limits. An EPA witness testified that an enforcement action would result if the DMRs reflected discharges outside the NPDES permit limits. Thus, according to defendant, the government did not establish materiality since its evidence reflected pollutant levels to be within permit limits and enforcement action would result only if the levels exceeded permit limits.

5. Analysis: The diary was not the only evidence the government produced; the record contains testimony that it was impossible for the treatment plant to meet its NPDES permit limitations during the indictment period. A government witness testified in detail regarding specific problems resulting from the plant's poor condition and why these problems made it impossible for the plant to meet its NPDES permit requirements during the indictment period. Moreover, the diary covered only two months of the period while the expert testimony reviewed the entire 18-month period. This expert testimony allowed the government to establish that defendant's false statements could have influenced an EPA enforcement decision.

6. A concurring opinion emphasized the narrowness of the decision. The majority opinion states that "[o]ur finding of materiality . . . turns on the evidence that defendant's false statements had the tendency to influence or were capable of influencing an EPA enforcement action." The concurring judge felt that this statement is correct under the facts, but it "should not be construed as holding that influencing "enforcement action" is the exclusive basis for finding materiality." Looking at the Clean Water Act, there are other examples showing that agency determinations may also depend on the accuracy of information contained in DMRs, such as certain permit decisions and establishment of pretreatment requirements. Even if "these determinations are not 'enforcement' oriented, upon proper proof, they may provide a basis for a finding of materiality. Many fact patterns could be presented in which a false statement could be capable of influencing required agency determination yet not be 'enforcement' oriented."

C. *Archer Daniel Midland Corp. v. Illinois Pollution Control Board*, 119 Ill. App. 3d 428, 75 Ill. Dec. 93, 456 N.E. 2d 914 (Ill. App. 4th Dist. 1983), *aff'd with modifications*, 149 Ill. App. 301, 500 N.E. 2d 580 (Ill. App. 1986).

1. Holding: Testimony on computer calculations, with no evidence presented regarding the nature of the computer data and no explanation of the computer process by which the computer calculations were made, is insufficient to justify imposition of a fine for noncompliance with environmental standards.

2. Laws involved: Illinois Environmental Protection Act, Ill. Rev. Stat., ch. 111½, §1001 *et seq.*).

3. Facts: The state alleged that Archer Daniel Midland (ADM) discharged contaminated stormwater in violation of its NPDES permit. Apparently the company's stormwater becomes contaminated when rain flushes spilled raw grain or processed grain products into its stormwater collection system. ADM did not contest the violations, but contended that the discharges were accidents, the pollution came from elsewhere, and there was no feasible solution to the problem.

   An Illinois EPA research economist testified as to his calculations of the amount of money the company had saved by delay of capital expenditures for necessary environmental improvements. He testified that the formula was complicated and the calculations were made by computer. He presented two calculations: (1) ADM's savings from August 1975 through the present (1983; a savings of $108,000); and (2) ADM's savings from July 1977 through the present for the late expenditure (savings of $53,000).

   The Pollution Control Board imposed a fine on ADM of $40,000.

4. Analysis: ADM clearly violated the statute. The company did not seriously contest the violations, the argument that the pollution found its source in intervening territory is without merit, and ADM did not meet its burden to show that compliance would pose unreasonable hardship. It is true that ADM has spent $4.5 million for environmental improvements and stands ready to spend another $1 million if a solution can be found.

However, the evidence is insufficient to justify imposition of the fine. Several of the economist's assumptions are unjustified. Additionally, and of significance to the court, the witness testified that his formula was so complex that he could not explain it. He did not present the computer data upon which the calculations were performed, nor did he attempt to explain the computer's result. Citing *Grand Liquor Co. v. Department of Revenue*, *infra* Section III.G., with approval, the court observed that "when computer evidence is introduced, some explanation of it is in order so that the opposing party may cross-examine to determine whether the garbage-in-garbage-out syndrome applies."

II. *ELECTRONIC DATA TREATED AS WRITING OR SIGNATURE*

A. *In re Kaspar*, 125 F.3d 1358, 31 Bankr. Ct. Dec. 675, Bankr. L. Rep. 77,506 (10th Cir. 1997).

1. Holding: Computer-generated form produced from debtors' oral statements in answering questions to complete line of credit and credit card application over the telephone (*i.e.*, debtors neither saw nor signed the form) did not satisfy the "in writing" requirement of the discharge exception for false statements of financial condition.

2. Law involved: Bankruptcy code regarding debt discharges and what is "a writing," 11 U.S.C. §523(a)(2)(B).

3. Facts: Linda Kaspar telephoned Bellco to apply for a line of credit and a credit card. The loan representative asked questions about Linda's financial condition, the name of her employer, her title, and salary. Linda orally responded to all of these questions, and as the answers were given, the loan representative entered the information into a loan application form on her computer screen. Linda then put her husband, Kurtis, on the phone, and he answered the same questions. The Kaspars also supplied the names of other creditors, the balances due on obligations owed those creditors as well as the monthly payments on the debts. The loan representative then read the figures back to the Kaspars who orally verified their accuracy. The Kaspars neither saw nor signed the application form entered into the computer. On the basis of the information in its database acquired from the Kaspars, Bellco issued them a line of credit and a MasterCard. Some time later, the

Kaspars filed a petition for relief under Chapter 7 of the Bankruptcy Code seeking to discharge the debt to Bellco as well as debts owed to other creditors.

Under §523(a)(2)(B), Bellco had to establish that the debtors used a "statement in writing" (1) that is materially false; (2) respecting their financial condition; (3) on which the creditor reasonably relied; and (4) which the debtors caused to be made or published with the intent to deceive. Focusing on the element of a "writing," the bankruptcy court held that because exceptions to discharge are narrowly construed, the computer-generated loan application did not constitute a "statement in writing."

4. Argument: Although a Florida bankruptcy court (*In re Graham*, 122 Bankr. Rep. 447 (Bankr. M.D. Fla. 1990) has equated the oral application with one that the debtor "caused to be made or published," the bankruptcy court in this case found that without any showing of a writing or signed document, the statements made by the Kaspars were oral and did not satisfy the express restriction to a writing found in §523(a)(2)(B). Bellco argues that the telephone application should be considered a "writing" to recognize the realities of the credit industry marketplace and the cyberspace world. In *Graham*, the creditor bank telephoned debtors to solicit their joint application for a credit card. Responding to requests for credit information, the debtors enhanced the value of their income, assets, and years of employment. In this case, the Kaspars solicited the application. Bellco urges the "relevant inquiry" is whether the debtors knew or should have known when they provided the credit information that "a written statement was prepared by the bank or provided by the bank." Bellco equates Kaspars' orally verifying the financial information with affirming the writing.

   Bellco urges the court to read the text of §523(a)(2)(B) as one continuous thought; the applicable portion would read: "Use of a statement in writing that the debtor caused to be made or published." This would focus on the making and publishing of a statement, and would recognize the intent of Congress to define a "written" statement as any statement a debtor makes or causes to be made for the purpose of obtaining money, services, or credit. Bellco also argues that computers are a permanent fixture in

today's business world, and that many lenders generate loan applications over the phone as an accepted business practice.

5. Analysis: The requirement of a writing is a basic precondition to nondischargeability under §523(a)(2)(B). Exceptions to discharge are to be narrowly construed, and because of the fresh start objectives of bankruptcy, doubt is to be resolved in the debtor's favor. Distinct reasons exist for Congress to have intended §523(a)(2)(B) to require a document in writing. Providing a statement of financial condition is a solemn part of significant credit transactions; that seriousness should be sanctified by a document which the debtor prepares or sees and adopts. Statements of financial condition are not akin to making a credit card purchase over the telephone; Congress has given a "special dignity" to these kinds of transactions. Section 523(a)(2)(B) has existed in its current format for over ninety-four years without change: "It remains in the form originally conceived and enacted by Congress. It goes without saying, we are bound by the law as we find it, not as we would like it to be." That the law "lags behind technology and custom" does not make it an issue for the courts.

6. **Note:** *In re Kaspar* is a recent case, so not many courts have cited it yet. Those courts that have cited *In re Kaspar* have not relied on it for its relevance to electronic reporting, but only for its comment that discharges to bankruptcy are to be construed narrowly.

B. *Doherty v. Registry of Motor Vehicles,* No. 97CV0050 (Suffolk Co., Mass. Dist. Ct., May 28, 1997).

1. Holding: (1) A police officer may electronically transmit a report that is required by law where the statute in question explicitly authorizes electronic transmission, even though no written signature is included; (2) Where an electronically transmitted police report includes a statement that identifies the officer making the report and a statement that it is made under penalty of perjury, the officer has "signed" the document within the meaning of the state perjury statute.

2. Laws involved: Refusal to take breathalyzer test and driver's license suspension, Mass. Gen. Law. c. 90, §24(l)(f)(1); perjury statute, Mass. Gen. Law c. 268, §1A.

3. Facts: Doherty was arrested for operating a motor vehicle while under the influence of alcohol and refused to take a breathalyzer test. The police officer made a report to the Registry of Motor Vehicles of Doherty's refusal to take the test. The report was made electronically and stated that it was made under penalty of perjury. The report, being electronic, did not contain the officer's handwritten signature; rather, it contained a sentence at the bottom of the report stating "This is the report of Trooper Thomas Kelley and was made by Trooper Thomas Kelley under the penalties of perjury. Data entry and transmission were done by Kelley, Thomas by or at the direction of Trooper Thomas Kelley."

   The hearing officer reasoned that under the most recent amendment to the state's laws pertaining to driving under the influence of alcohol, police are permitted to transmit electronically to the Registry of Motor Vehicles a report of an arrestee's refusal to take the breathalyzer test without an "actual signature."

   Prior to 1995, the statute specifically called for a written report in the event of a refusal to take the breathalyzer test and required the report to be sent "forthwith to the registrar along with the confiscated license or permit and a copy of the notice of intent to suspend" the person's license. In 1995, the statute eliminated the phrase calling for a written report and required only that the police report be made "in a format approved by the registrar." It still requires the report and the copy of the notice of intent to suspend to be sent to the registrar, but these items may be sent "in any form, including electronic or otherwise, that the registrar deems appropriate." Moreover, the statute changed the requirement that the report must be "sworn to" under penalty of perjury to a requirement that the report be "made" under penalty of perjury.

4. Analysis: Doherty argued that the electronic report was not signed in writing under penalty of perjury as required by the perjury statute and thus would not expose the officer to a prosecution for perjury for willfully false and material misstatements.

   The court rejected Doherty's argument and affirmed the administrative decision. The 1995 amendments were designed to simplify the process by which police officers report to the Registry

of Motor Vehicles that a person has been arrested for operating under the influence of alcohol and has refused to submit to a breathalyzer test. The statute clearly permits electronic transmission of these reports. It must be presumed that the legislature was aware when it made this amendment in 1995, not only of the provisions of the perjury statute, but also of decisions of the Massachusetts Supreme Judicial Court. These decisions have interpreted statutory language that requires documents to be in writing as not necessarily requiring a handwritten signature. "[S]o far as the form of signing is concerned, signing in any manner that conformed to other requirements of law, even though not in handwriting, would bring the person so signing within the scope of the statute. . . .A person who 'signs' a 'written statement,' within the scope of the statute, other than in handwriting, should not for that reason be free of liability for a statement so 'signed' that is 'willfully false in a material manner.'"

5. Court's observation regarding authenticity: The court notes that its decision on the merits does not address issues regarding authenticity of electronic documents. Without using encryption technology, it is "certainly possible" for someone to make it look as though an e-mail message has come from another person. However, the court notes, this is also true for handwritten signatures. In any event, in this case authenticity of the document was not disputed. The court politely questions whether it might be "useful to consider whether legislation or court rules should be adopted" in this area.

C. *Parma Tile Mosaic & Marble Co v. Estate of Short*, 879 N.Y.2d 524, 640 N.Y.S.2d 477, 663 N.E. 2d 633 (N.Y. 1996).

1. Holding: Automatic imprinting by a fax machine of the sender's name on top of each page transmitted did not satisfy a requirement under New York's general statute of frauds that a writing be "subscribed."

2. Law involved: New York State's Statute of Frauds (General Obligations Law §5-701).

3. Facts: A construction company sought to purchase ceramic tiles from plaintiff tile company. Due to the size of the contract, plaintiff

sought a guaranty of payment. The construction company was a subcontractor on the job for which it wanted the tile. Pursuant to the construction company's suggestion, plaintiff contacted the general contractor. After discussion, the general contractor faxed a document to plaintiff. Subsequent to receipt of this document, plaintiff began supplying the subcontractor with tile. When the principal owner of the subcontractor company died without having paid for all the tile, plaintiff sued his estate and the general contractor. Plaintiff contended that the fax was a guaranty; defendant general contractor contended the document was an unsubscribed proposal for a guaranty.

Plaintiff's copy of the two-page document bore a heading at the top of each page which indicated the name "MRLS Construction" (the name of the general contractor), a telephone number, the date and time, an unidentified number, and a page number. The parties do not dispute that, before sending the document, MRLS had programmed its fax machine to imprint this information automatically on every transmitted page. The document was not preceded by a cover letter or any other identifying document.

4. Analysis: The New York Statute of Frauds focuses on the intent, not the nature of how the document was transmitted: "the tangible written text produced by telex, telefacsimile, computer retrieval or other process by which electronic signals are transmitted by telephone or otherwise shall constitute a writing and any symbol executed or adopted by a party with the present intention to authenticate a writing shall constitute a signing" (§5-701(b)(4)).

In this case, the general contractor's fax machine, after being programmed to do so, automatically imprinted on every page the name of the company, a telephone number, the date and time, and a page number. This information appeared only on the recipient's faxed copy. This intentional programming did not, by itself, sufficiently demonstrate the general contractor's apparent intention to authenticate every document it faxed. According to the court, "[t]he intent to authenticate the particular writing at issue must be demonstrated." Quoting former Chief Judge Cardozo: "A signature for Statute of Frauds purposes may be 'a name, written or printed, [but] is not to be reckoned as a signature unless inserted or adopted with an intent, actual or apparent, to authenticate a writing.'"

D. *Spevack, Cameron & Boyd v. National Community Bank of N.J.*, 291 N.J. Super. 577, 677 A.2d 1168 (N.J. Super. Ct. App. Div.), *certification denied*, 146 N.J. 569, 683 A.2d 1164 (N.J. 1996).

1. Holding: The unique account number assigned by a bank to a depositor is a "signature" for purposes of endorsing a check for deposit. A unique bank account number sent on-line is as complete a signature as a depositor's written name.

2. Facts: The plaintiff law firm represented a client, third-party defendant Samuel Salter, in connection with a loan he was obtaining to be secured by a mortgage on property. In advance of closing, Spevack received the loan proceeds from the lender and deposited the money in its trust account. A title search disclosed an existing mortgage. Spevack obtained a pay-off letter and at closing drew a check on its bank made payable to the lender (about $970,000) on behalf of its client Salter. When deposited, the check was endorsed "deposit only" followed by the account number of the lender. However, the law firm did not know that Salter had set up the mortgagee as a shell corporation; Salter did not own the real estate which he purported to mortgage and the supposed mortgage was fictitious. The purported mortgagee was an alter ego of Salter, who used Spevack's money for his own purposes.

3. Argument: Spevack instituted this suit against its bank, alleging it breached a duty owed to Spevack by paying out on Spevack's check to the fictitious lender. Spevack argued that the check was not properly endorsed by the lender since it contained only the words "deposit only" and an account number rather than a signature; moreover, the proceeds of the check were diverted to uses other than those intended by the firm.

4. Analysis: The fact that the money was actually credited to the account of the named payee is a valid defense to a claim of faulty or forged endorsement. "Signature" used in an endorsement may take many forms and need not be a signed name. "In this computer age the use of numbers as a means of identification has become pervasive. Indeed, numbers are more readily recognized and handled than signatures." The signature (*i.e.*, the account number at the bank where the check was deposited) accurately identified the payee. "In fact, had Homequity written a name without the

account number, the bank would have had to look up the number that corresponded with the name. In keeping with the electronic age, it is the numbers which have the primary significance."

E. *United States v. Miller*, 70 F. 3d 1353, 315 U.S. App. D.C. 141 (D.C. Cir. 1995), *cert. denied*, Miller v. United States, 517 U.S. 1147, 116 S. Ct. 1446 (1996).

1. Holding: The unauthorized use of a personal identification number (PIN) to withdraw funds from an ATM machine is forgery; it is equivalent to cashing a check with a forged signature.

2. Laws involved: Bank fraud (18 U.S.C. §1344); access fraud (18 U.S.C. §1029(a)(2)).

3. Facts: Miller, the defendant, was an aide to a D.C. city council member; he occasionally cashed checks for the council member. At some point, Miller acquired his boss's ATM card and withdrew $11,000 via ATM over a five-week period.

4. Analysis: Miller argues his bank fraud conviction should be reversed on the grounds of insufficient evidence. Section 1344 makes it unlawful to participate in "a scheme to defraud a financial institution," 18 U.S.C. §1344(1), or "a scheme to obtain any of the moneys, funds, credits, assets, securities, or other property owned by, or under the custody or control of, a financial institution, by means of false or fraudulent pretenses, representations, or promises," §1344(2). The district court initially charged the jury only on elements of a §1344(2) violation, instructing that the government bore the burden of proving that "Miller knowingly executed a scheme to obtain the money owned by or under control of the financial institution by means of false or fraudulent pretenses, representations, or promises." Miller contended that there was no evidence he ever made any misrepresentation. The court disagreed.

   a. Evidence that Miller used his boss's ATM card without her authorization, entered her PIN, and made a withdrawal is sufficient to establish misrepresentation as an element of bank fraud. Each time Miller inserted the card into an ATM and entered the PIN, he represented to the bank that he had

authority to withdraw funds from Rolark's account, just as he had previously represented each time he presented a bank teller with one of her checks. Miller argued that making unauthorized electronic withdrawals is akin to check-kiting, which other circuits have found cannot, by itself, constitute mail fraud.

b. The court concluded that the rationale underlying other court holdings is that "a check does not 'make any representation as to the state of [an account holder's] bank balance,' and hence cannot be characterized as true or false." Miller made no representation regarding the balance in Rolark's account when he requested the electronic withdrawals. What he did do was to enter Rolark's PIN, which acted as a sort of electronic signature authorizing an ATM to release available funds. Doing this without Rolark's knowledge or permission is tantamount to cashing a check with a forged signature, which the court has held violates §1344(2).

c. The court found another case, *United States v. Briggs*, 939 F.2d 222 (5th Cir. 1991), to be unpersuasive. In that case, the court found that a defendant who ordered unauthorized wire transfers from her employers' bank accounts did not violate §1344(2) because as "far as the sparse record discloses, Briggs made no explicit false representations, statements, or promises in carrying out her scheme." The Briggs court noted that "precisely how [the defendant] effected these transfers is unclear" and observed that "where the defendant falsely represents that she is acting under her employer's authority, we would have little trouble concluding that such conduct is squarely prohibited by the statute." In *Miller,* however, the means by which Miller accomplished the ATM withdrawals is known: he used Rolark's PIN, alleging he had authority to use it.

F. *Hessenthalar v. Farzin,* 388 Pa. Super. 37, 564 A. 2d 990 (Penn. Super. Ct. 1989).

1. Holding: A mailgram, which a seller sent to prospective purchasers of real estate to confirm acceptance of a sale, constitutes a "signed writing" within the meaning of the Statute of Frauds.

2. Laws involved: Pennsylvania Statute of Frauds, 33 Penn. Stat. §1 *et seq.*

3. Facts: The Farzins told their real estate agent they would accept an offer to buy her house under certain conditions. The agent met with Hessenthaler and drafted an agreement according to the Farzins' terms; Hessenthaler signed it. The agent told the Farzins that if they wished to accept this offer they should send him a telegram; they sent a mailgram confirming acceptance. When the agent sent the written agreement to the Farzins for their signature, they attempted at that point to add an additional term. Hessenthaler sued for specific performance.

4. Analysis: The mailgram the Farzins sent to the agent constitutes a signed writing within the meaning of the statute of frauds. The purpose of the statute is to prevent the possibility of enforcing unfounded, fraudulent claims by requiring that contracts pertaining to interests in real estate be supported by written evidence signed by the party creating the interest. The statute is not designed to prevent the performance or enforcement of oral contracts that in fact have been made. Neither the statute nor the case law require that a signature be in any particular form; the key is whether the signer intended to authenticate the document.

   A writing under the statute of frauds requires an adequate description of the property, a recital of the consideration, and the signature of the party to be charged. In this case, the mailgram stated quite clearly that the Farzins accepted the offer. Moreover, the mailgram specifically identified the Farzins, stated the offer price, and listed the property's address.

G. *People v. Avila*, 770 P.2d 1330 (Colo. Ct. App. 1988); *reh'g denied*, Dec. 29, 1988; *cert. denied*, Mar. 27, 1989.

1. Holding: A defendant's deletion of computerized drivers' records from the state Motor Vehicle Division constitutes forgery. The Colorado forgery statute includes computer disks within the definition of a "written instrument."

2. Law involved: Colorado forgery statute, Colo. Rev. Stat. §18-5-101(9) (written instruments), §18-5-101(2) (false alteration), and §18-5-103 (written instruments officially issued by government agencies) (1986).

3. Facts: Avila, a lawyer, altered the computerized driving records of two clients whose driver's licenses had been revoked for alcohol-related offenses. Avila would have his contact delete the driving records, and the client would subsequently apply for a driver's license as if he had not previously had a license. Avila and others were found out through a internal investigation of database irregularities.

4. Analysis: The court rejects Avila's argument that forgery cannot be committed on a computer. Forgery can be made by "any number of artificial means" (citing *United States v. London*, *infra* Section IV.B.). Whether a forgery "is made with the pen, with a brush . . . with any other instrument, or by any other device whatever; whether it is in characters which stand for words or in characters which stand for ideas . . . is quite immaterial" (quoting *Benson v. McMahon*, *infra* Section IV.C.).

   The court holds there is sufficient evidence to uphold Avila's conviction. Relevant elements of second degree forgery are that (1) the defendant, (2) with intent to defraud, (3) falsely alters, (4) a written instrument, (5) which is or purports to be, or which is calculated to become or to represent if completed, a "written instrument officially issued or created by a public office, public servant, or government agency."

   a. **written instrument:** Colorado forgery statute defines "written instrument" as: "any paper, document, or other instrument containing written or printed matter or the

equivalent thereof, used for purposes of reciting, embodying, conveying, or recording information . . . which is capable of being used to the advantage or disadvantage of some person."

(1) A fair reading of the forgery statute indicates that a computer disk is included within the definition of "written instrument."

(2) The previous forgery statute contained a list of specific written instruments; the present statute eliminated the list.

b. **false alteration:** The statute states that "false alteration" means: "to change a written instrument without the authority of anyone entitled to grant such authority, whether it be in complete or incomplete form, by means of erasure, obliteration, deletion, insertion of new matter, transposition of matter, or any other means, so that such instrument in its thus altered form falsely appears or purports to be in all respects an authentic creation of or fully authorized by its ostensible maker."

c. **officially issued:** The statute states a person commits forgery if he falsely makes a "written instrument officially issued or created by a public office, public servant, or government agency." Avila argued that a driver's history is only officially created when certified with a seal. The court rejects this argument for several reasons. First, driving records are official records of the state of Colorado. Second, as already held, the computer disks that contain the driving records are written instruments. Third, the driving records are created by a government agency, since the department entered the information. Finally, the plain language of the statute does not require actual authentication in the form of a seal.

III. *ADMISSIBILITY OF ELECTRONIC DATA – State Cases*

A. *State v. Christensen*, 582 N.W. 2d 675 (S. Dak. 1998).

1. Holding: A computer printout generated by a hotel security system is admissible under the business records exception to the hearsay rule. Several key components of the court's rulings:

   a. No additional foundational requirements, such as industry standards, are necessary, although a specific computerized system must be shown to be as reliable as other kinds of business records

   b. A hotel employee with experience in operating the hotel's computer security system is a qualified witness for purposes of admitting evidence under the state's business records exception statute even though he is not a computer expert *per se.*

   c. Computer records kept by a company for even a short period (in this case, 30 days) can constitute records maintained in the ordinary course of business.

2. Laws involved: S. Dak. C.L. §19-16-10 (business records exception to hearsay rule); state burglary law.

3. Facts: Christensen, a hotel security guard, was convicted of burglary for entering a locked hotel room and fondling a sleeping woman. Evidence included the victim's verbal description of the man, her identification of him in a photo lineup, and Christensen's admission that he occasionally used the bellman's key when taking items to rooms (although he denied using it on this particular night). The computer evidence involved the hotel's electronic door lock system. Hotel guests use cards with magnetic strips to enter their rooms. The use of these "keys" is registered and recorded on the hotel's door-lock system, contained within each guest's door. The hotel saves this information for 30 days, then the system automatically erases it. A portable programmer is used to access the information saved by the door-lock system. The information is then transferred to a regular personal computer so that it can be printed out. These printouts are not made on a daily basis at this

hotel, but they are produced when a customer complains that someone may have entered their room. The printout in this case indicated that the bellman's key was used to enter the victim's room at 1:21 a.m. on the night in question.

4. Analysis re foundation and reliability: Christensen contends that there should be additional foundational requirements for admission of computer-generated records. The court rejects the argument that the state failed to lay a proper foundation as to whether the computer security system was standard within the industry and whether retrieval of the information from the system occurs in a manner indicating trustworthiness. A computer system must be reliable, but proving industry standard is not justifiable. "At this stage in the evolution of computer technology, there is no need to require proof of industry standard."

   According to the court, this is really an issue of general reliability. In this case, there is no evidence that the hotel or its employees had the motive, opportunity, or ability to tamper with the computerized records. Moreover, the employee in charge of downloading the information from the door-lock memory testified that the data were created in the normal course of business.

5. Analysis re trustworthiness: Christensen challenged the trustworthiness of the computerized door-lock information. The court concludes that the information in the exhibit and the uncontested testimony of witnesses indicates that the computerized information was reliable. The victim and her friends testified as to the time of day that they arrived at the hotel, checked in, and went in and out; the computer system confirms that every time the victim returned to her room was at the time she indicated. The computer system also registered the use of the bellman's master key at 1:21 a.m. With this type of evidence in the record the trial court did not abuse its discretion in concluding that the computer data was trustworthy.

6. Analysis re custodian's qualifications: Christensen took issue with a hotel employee's qualifications to testify about the computerized lock system and authenticate the computer records. This employee was the hotel's chief custodial engineer and had approximately one year of experience with the security system. He testified he had

manuals for the security system to which he could refer. Christensen attacked the witness's qualifications because he did not have computer science training, programming experience, or computer repair experience. The court concluded that the witness was qualified to testify about the computerized lock system and could authenticate the printout. The witness explained how the computer system worked and testified that the computer recorded the opening of every guest room door on the property. His testimony indicated that he was proficient at retrieving and printing out information stored in the computer system.

7. Analysis re computer records being in the ordinary course of business: Christensen asserted the computerized evidence was not kept in the ordinary course of business. The court agreed that the information is not stored forever; the hotel kept the door-lock data for 30 days. However, Christensen did not show how this relatively short period of time disqualified the information from meeting the requirements of being a business record under the state business records statute.

8. **Note:** as of April 21, 1999, no courts appear to have relied on this case.

B. *Allen v. Wachtendorf*, 962 S.W. 2d 279 (Tex. Ct. App. 1998), *rehearing overruled* (Mar. 5, 1998), *review denied* (June 23, 1998).

1. Holding: It is permissible for a bank to maintain the terms and conditions of deposit agreements on computer storage media; the fact that the bank does not maintain a hard copy for each account does not affect admissibility of the computer evidence of the terms and conditions.

2. Laws involved: Texas Probate Code 439(a); business records exception to hearsay rule.

3. Facts: Dorothy Allen opened an account at Cuero Federal Savings. Both Allen and her son, Walter Allen (appellant in this case) are named as the joint account owners. Under "Ownership of Account," Allen's initials were next to "Multiple Party Account--With Survivorship" which is also marked with two Xs. The signatures of both Allen and appellant appear on page one of the

signature card. Above the signatures it states: "Signature(s) -- the undersigned agree(s) to the terms stated on pages 1 and 2 of this form, and acknowledge receipt of a completed copy on today's date."

Appellees, Allen's other son and stepdaughter, claim there is no right of survivorship in the account and thus the contents of the account belong in Allen's estate. Appellees contend that the signature card consisted of only one page, that signed by Allen and appellant. They acknowledge that a second page is referred to, but argue that it should not be considered because it is unidentified, is not attached to page one, and there is no evidence that Allen ever saw it.

A bank officer identified the two pages of the signature card and explained the bank's normal practices in opening accounts and maintaining records. Another witness confirmed that the signature card consists of two pages, the second of which is entitled "Account Terms and Conditions." The affidavits established that the bank maintains the original of page one, with the parties' original signatures. The second page – the terms and conditions of the deposit agreement – is standard for all signature cards; the bank maintains the original on computer storage media rather than an identical hard copy for each account. It is the bank's usual practice to give account holders copies of both pages of the agreement.

4. Analysis re admissibility: The second page is admissible, and the combined language of both pages substantially complies with the requirements of the Texas Probate Code. Appellees complain that the bank did not retain the second page of the signature card, but the summary judgment evidence they themselves submitted establishes that the second page is retained on computer storage media. Citing *United States v. Vela, infra* Section IV.H, the court notes that original documents can be maintained in machine-readable formats and hard-copy duplicates authenticated in the same manner as manually kept business records. Moreover, Texas law indicates that absent a stipulation to the contrary, each party to a contract need not retain a copy of the agreement for it to be effective. There is no evidence to suggest that the bank deviated from its usual practice and did not give Allen copies of both pages

of the signature card. It is thus presumed that Allen read and understood both pages.

C. *People v. Hernandez*, 55 Cal. App. 4th 225, 63 Cal. Rptr. 2d 769 (Cal. Ct. App. 4th Dist. 1997), *rehearing denied* (June 9, 1997), *review denied* (Aug. 27, 1997).

1. Holding: Evidence obtained from an in-house computer system maintained by the San Diego Police Department (SDPD) is not "trustworthy" within the requirements of the business records exception to the hearsay rule.

2. Laws involved: California Evidence Code §1271 (business records exception to the hearsay rule); various sections of the California Penal Code.

3. Facts: Defendant Hernandez was convicted of violent sex offenses. The prosecution offered to use a computer crime analysis search to show there had been no similar crimes in the areas where the attacks had occurred before Hernandez moved to California and after his arrest. A crime analyst testified she had worked for the SDPD for five years and testified to her training and background. She described the computer system, indicating that items are entered by support personnel after a reported incident. The system was used in the normal course of business for the SDPD, the SDPD frequently relied upon the system, and it was regularly used by the sex crimes unit. For this case, the analyst had searched the system for other sex crimes, defining variables such as physical description of the victim and assailant, for the two areas in which the crimes had occurred. She eventually narrowed her inquiry down to two cases -- the two cases with which Hernandez was charged here.

   The witness testified that the data come from reports by the officer who responded to the crime scene, who would give the report to the sex crimes unit for entry into the log. The information is transferred by clerical support or the detective and includes a case summary and assailant descriptions. The witness testified that the information put into the system is not "exactly what's told to the original reporting officer. It's either ... what's in the 911 tape, or ... what's told to the reporting officer, or ... it's an edited version of what is told to the sex crimes detective[.]"

The computer file is not connected to other law enforcement computer systems. The witness had no knowledge of anyone periodically checking to ensure that all sex crimes occurring in certain beats within the SDPD jurisdiction were included in the system. The witness testified that a crime occurring outside the boundaries of the two beat areas for which she was asked to limit her search, even one block outside, would not be included in the data retrieved. The witness testified that she did not rely solely on the computer data to arrive at her conclusion that there was a similarity between the two incidents in this case; she looked into the sex crimes files and handwritten police reports to check on other variables.

The trial court denied the motion to exclude, concluding that questions regarding the reliability or accuracy of the data go to weight rather than admissibility. However, the court did not allow computer printouts to be admitted, permitting only the witness's testimony.

4. Analysis re trustworthiness: The court agrees that the trial court abused its discretion by admitting the crime analyst's testimony concerning her database search. Pursuant to *People v. Lugashi, infra* Section III.K, computer data may at times properly be admitted as a business record and the best evidence rule does not foreclose admission of computer-recorded information or programs. Although many of Hernandez's arguments regarding the witness's qualifications to testify about the computer system and explain the data have been resolved against him in other cases, the databases in other cases generally arose out of a statutory or business duty to record the data during the regular course of business and challenges to admissibility usually go to alleged foundational shortfalls, not to defectiveness of the database.

In this case, the prosecutor argued the information was trustworthy because it was relied upon by the detectives. The court concluded that this explanation, which the trial court apparently accepted, ignores the fact the business records exception has been held to be inapplicable to admit police reports into evidence for the reason they might be based upon the observations of victims and witnesses who have no official duty to observe and report the facts. Having an employee take "facts" from police reports, enter those

"facts" into a log, and put those "facts" into the computer system does not convert the facts contained in the police officer's reports into competent, reliable, trustworthy evidence admissible at trial.

5. Analysis re issue of prejudicial error: The court concludes the error was prejudicial. The analyst's testimony gave a "false aura of computer infallibility" in its identification of Hernandez as the assailant. The prosecutor presented her as if she were an expert without being so qualified. The court concludes that the crime analyst's testimony is also similar to prejudicial "profile" evidence, held to be inadmissible for purposes of determining guilt or innocence in another California case.

D. *Bray v. Bi-State Development Corp.*, 949 S.W.2d 93 (Mo. App. E.D. 1997), *rehearing denied* (July 14, 1997), *transfer denied* (Aug. 19, 1997).

1. Holding: It was proper for a trial court to admit into evidence a chart produced for litigation and generated from computer software showing probable light intensity levels in a garage.

2. Laws involved: common law of negligence; rules of evidence regarding laying of foundation and authenticating documents in litigation.

3. Facts: Plaintiff Bray fell and injured herself while walking to her car in a garage operated by defendant company. Bray alleged the company was negligent in how it maintained garage lighting and in not appropriately marking the curbs. The company entered into evidence a computer-generated chart that showed light intensity levels in the area where Bray fell and had an expert witness testify regarding the chart.

   The witness, a civil engineer, had worked on the design of the garage, including the lighting. He testified that the chart graphically depicted the light intensity on the garage floor where Bray fell. The chart was produced using a software program intended for use in lighting design. The witness had personal knowledge of the data fed into the program, which was based on bulbs, fixtures, and wiring in place at the garage on the day Bray fell. Because the witness did not allow for sunlight, and Bray fell during the daytime when some natural light fell into the garage, his

results showed light levels less than those actually present. To verify the computer results, the witness took light measurements in the garage; his readings generally conformed with the computer printout. The witness testified that the exhibit showed that the lighting where Bray fell was three to six foot candles and that in his opinion, three to six foot candles provided sufficient lighting for a person to be able to see a curb.

4. Analysis re foundation: The trial court did not err in overruling Bray's objection based on a challenge to the software's validity. An adequate foundation includes proper authentication of the computer-generated evidence. Whether a proper foundation has been established is primarily a question for the trial court's discretion. Several elements have been required in other cases:

   a. **that the computer is functioning properly:** Courts have generally not required an affirmative showing of this in the absence of a challenge, both in the context of admission of computer evidence as direct evidence or in the context of business records.

   b. **that the underlying data and equations are sufficiently complete and accurate, and disclosed to the opposing party:** Cases generally require that the software's accuracy be established. The scientific community's use of or reliance on the software is generally sufficient to establish accuracy.

   c. **that the program is generally accepted by the appropriate scientific community:** General acceptance derives from the *Frye v. United States* standard for admission of testimony based on scientific principles and the results of scientific tests. Several courts have found general acceptance by showing reliance by experts in the field, which parallels Missouri statutory law for opinions of expert witnesses.

   The general consensus is that a trial court may exercise its discretion in this area without the need for a precise formula. In this case, the witness testified that the computer program contained data that allowed it to produce a printout that accurately predicted light levels. He testified that engineers rely on the program to make lighting decisions and that the lighting manufacturer's

representative generally uses this software to produce similar printouts. The witness was familiar with the software and knew how to manually calculate the same results. He verified his results with actual light readings. The exhibit was produced to Bray prior to trial.

5. Analysis re whether expert is required to run the program: On appeal, Bray asserted that the foundation was inadequate because the witness did not prepare the computer program or feed the data into the computer. The court concludes that there is no requirement that an expert do this. The witness supervised the process and supplied the data, and testified that he relied on the manufacturer's representative to run the program.

6. Analysis re accuracy or reliability of computer evidence: On appeal, Bray asserted that there was no evidence that the computer program was accurate or reliable and or that lighting levels in the exhibit were substantially similar to lighting levels at the garage at the time of the occurrence. The court concludes that record does not support this assertion. The witness testified how the lighting data duplicated lighting conditions on the day of the accident. He informed the jury how variables (e.g, dirt, sunlight) were accounted for. He testified the results were more conservative than the actual lighting conditions because he did not make allowance for sunlight.

E. *Lombardi Enterprises, Inc. v. City of Waterbury*, 1997 WL 133367 (Conn. Super. Ct. Mar. 7, 1997).

1. Holding: The city made claims under three exceptions to the hearsay rule: public records, business records, and the general reliability exceptions. Three holdings:

   a. **public records:** A computer printout from a national computer system database does not qualify under the public records exception to the hearsay rule because the police officer's actions of generating a printout from the system does not mean he "made" the record as required by the exception; also, the officer did not have personal knowledge of the information he downloaded.

b. **business records:** The city has not established the necessary foundation to admit a computer printout from a national computer database system. The officer who downloaded the data had no personal knowledge regarding the data and no information was provided regarding the accuracy or reliability of the computer system.

c. **catchall reliability exception:** There is no evidence that the computer printout is supported by the equivalent guarantees of reliability and trustworthiness essential to other evidence admitted under the traditional hearsay exceptions.

2. Laws involved: Connecticut statutes relating to public records exception, business records exception, and general exception to hearsay rule; not clear but probably also a city tax ordinance.

3. Facts: Lombardi Enterprises appears to have contested a tax action imposed by the Waterbury Board of Tax Review against the company. The city sought to introduce a computer printout that contained information relating to the ownership and registration of 63 vehicles. The trial appears to have been temporarily recessed pending the court's decision regarding Lombardi's claim that the printout constituted inadmissible hearsay.

4. Analysis re public records exception: The city argued that the computer printouts should be admitted under the public records exception because "the ultimate source of the information contained on it" is the Waterbury police department's computer. The court observes that for information to be admitted into evidence under the public records exception to the hearsay rule it must be a public record made by an official who is legally required to keep the record; the record must be made in the course of the official's duties; and the official must have personal knowledge of the matter contained in the record. In this case, the officer's actions of generating a printout from the computer system did not constitute "making" a record, even if, as the city argued, he was "specially trained and certified" to operate this particular computer system. Also, the officer had no personal knowledge of the information; the data he obtained was from a different city and state.

5. Analysis re business records exception: Requirements for the business records exception are that the record "was made in the regular course of any business, and that it was the regular course of the business to make the writing or record at the time of the act, transaction, occurrence or event or within a reasonable time thereafter." All business records, computer printouts included, must be authenticated by a witness who can testify to the statutory requirements. For computer evidence, the foundation requires a witness who has "some degree of computer expertise, who has sufficient knowledge to be examined and cross-examined about the functioning of the computer." For computers, because of the "complex nature of the operation of computers and general lay unfamiliarity with their operation," the court needs to "take special care to be certain that the foundation is sufficient to warrant a finding of trustworthiness and that the opposing party has full opportunity to inquire into the process by which information is fed into the computer."

    a. The police officer testified that he was "specially trained and certified" on the computer system, that the system is routinely used by the city's police department, and that other police organizations throughout the country use the system. However, even though the officer may have been an expert in generating records such as the ones in this case, he does not have any connection to the computer system that supplied the information. No information was provided regarding the national computer system, or its operations, accuracy, method of acquiring data, or reliability. Nothing in the record indicated that officer had any personal knowledge as to how the national system acquired its information. The officer's knowledge may simply be the ability to obtain information from a large national database.

    b. The court cites another Connecticut case, *Central Bank v. Colonial Romanelli Associates*, *infra* Section III.G, in which an FDIC credit specialist testified regarding the contents of computer records: "He had no personal knowledge of the reliability of the computer system but merely accessed it and used the information obtained therefrom." The court in *Shadhali, Inc. v. Hintlian*, *infra* Section III.F, another Connecticut case, observed that the business record need not

be prepared by the same organization wishing to enter it into evidence, but the entrant must have a duty to prepare the record in order for it to be admissible as a business record exception.

c. The court discusses *United States v. Scholle, infra* Section III.J., which involved a Drug Enforcement Administration computer system. Even though the developer of the system was the one offering foundation testimony, the court allowed the testimony only in deference to the trial court's exercise of discretion, stating that "the foundation for reception of the evidence could have been more firm." In this case, the city offers no evidence as to the reliability of the information that was entered into the database computer. The court notes that "*Scholle* represents strong evidence that such computer records should be able to withstand a high threshold of court scrutiny in terms of their admission into evidence as a business records exception to the rule against hearsay."

d. Analysis re general catchall exception: To meet the requirements in Connecticut for the catch-all exception a party must show that the information "may be lost either because the declarant is dead or otherwise unavailable, or because the assertion is of such a nature that the evidence of the same value cannot be obtained from the same or other sources," and that the evidence should contain information "necessary to the resolution of the case." There must be a reasonable necessity for admission of the evidence and the statement must be supported by "equivalent guarantees of reliability and trustworthiness essential to other evidence admitted under the traditional hearsay exceptions." In this case, the court concludes (with no additional explanation) that there is no evidence that the information in the printout is supported by any of the usual guarantees of trustworthiness and reliability.

6. **Note:** as of April 21, 1999, no courts appear to have relied on this case.

F. *Shadhali, Inc. v. Hintlian*, 41 Conn. App. 225, 675 A.2d 3 (Conn. Ct. App. 1996), *certification denied*, 237 Conn. App. 926, 677 A.2d 948 (Conn. 1996).

1. Holding: Computer documents indicating the amount due on a promissory note are admissible under the business records exception to the hearsay rule since they are made in the regular course of business, the company kept such records as part of its business, and the records were made contemporaneously with payments made on the note.

2. Laws involved: business records exception to the hearsay rule (Conn. Gen. Stat. §52-180).

3. Facts: Shadhali was the assignee of a promissory note executed by the Hintlians. The note was secured by a mortgage on real estate. Since the date of the assignment from the original promisee (a bank) to Shadhali, the Hintlians made no payments on the note and did not pay real estate taxes on the property. The trial court rendered judgment of strict foreclosure in favor of Shadhali.

   The two documents at question on appeal were an adjustment sheet and a computer printout, to determine the amount due on the note.

4. Analysis: Citing *Central Bank v. Colonial Romanelli Associates, infra* Section III.G, for the basic proposition that the documents must come within some exception to the hearsay rule in order to be admissible, the court held that the trial court did not abuse its discretion by admitting the adjustment sheet and the computer printout pursuant to the business records exception. At trial, the vice president of Shadhali testified that it was Shadhali's business corporation to invest in properties. The witness explained that an adjustment sheet is customarily prepared for a real estate closing and that the sheet here was prepared in the regular course of the closing between the bank and Shadhali contemporaneously with the assignment. A vice president of the bank testified that the computer printout was made in the regular course of business, that it was the regular course of business for the bank to keep such

records, and that the records were made contemporaneously with payments made by the Hintlians. This witness also was familiar with the procedures by which the bank enters data into its computer system.

G. *Central Bank v. Colonial Romanelli Associates,* 38 Conn. App. 575, 662 A.2d 157 (Conn. Ct. App. 1995).

1. Holding: Oral testimony regarding computer calculations of a debt, date of default, and interest is inadmissible as hearsay.

2. Laws involved: hearsay rule; best evidence rule.

3. Facts: Defendants Colonial Romanelli Associates, Richard Suisman and Mark Gerrety signed a $700,000 note payable to First Central Bank (Central). Defendants Suisman and Gerrety, together with two other defendants, endorsed the note. When the defendants defaulted, Central brought this action. Central sought payment of the note and reconveyance of real estate allegedly fraudulently conveyed by one of the defendants to his wife, another defendant. The trial court rendered judgment for Central (technically, the Federal Deposit Insurance Corp. (FDIC) as receiver, since Central was declared insolvent after instituting this action).

   The defendants complained that evidence of the amount of the debt should not have been admitted because it lacked a proper foundation and it was hearsay. The FDIC had a credit specialist testify regarding the date of default and the principal and interest due. The witness based his testimony on Central's and FDIC's computer records. The computer records themselves were not entered into evidence.

4. Analysis re foundation: The witness's testimony should not have been admitted because it was hearsay and no exception applied. The witness had no personal knowledge of the reliability of the computer system. The witness was not responsible for entering the data in the computer and had no opinion concerning the accuracy of the records or how they were created. The computer records themselves were the best evidence of the amount of the debt and the interest calculation, since the contents of the records were at

issue. Accordingly, they should have been admitted into evidence before the witness was permitted to testify concerning the content.

H. *Medicine Shoppe International, Inc. v. Mehra*, 882 S.W. 2d 709 (Mo. App. E.D. 1994), *rehearing denied* (Aug. 23, 1994).

1. Holding: Computer-generated information is admissible if it is shown that the business frequently employs computer equipment to enter and store information, that entries are made in the regular course of business, at or near the time of the events, and the court is satisfied that the source of information and preparation indicate trustworthiness.

2. Laws involved: business records exception to hearsay rule, Mo. Stat. §490.680.

3. Facts: Medicine Shoppe is a franchisor of retail pharmacies. Mehra and her former husband contacted Medicine Shoppe about the possibility of opening a pharmacy. At the time, Mehra and her former husband were actively practicing physicians. They were also the sole shareholders of Anjusha Enterprises, Ltd. (Anjusha), a Missouri corporation formed for the purpose of acquiring and operating a Medicine Shoppe pharmacy. Medicine Shoppe granted Anjusha a license to operate a pharmacy.

   About a year later, Mehra transferred her rights in her stock in Anjusha to her former husband. However, Mehra never notified Medicine Shoppe she was withdrawing from the franchise. Mehra's former husband opened the pharmacy for business. Mehra testified she was never involved in day-to-day operations or management of the pharmacy. Mehra's marriage later was dissolved; the pharmacy closed about a year after that. Medicine Shoppe filed a claim against Anjusha, Mehra, and Mehra's former husband for breach of contract. Prior to trial, Medicine Shoppe dismissed its claim against Anjusha because it was insolvent. Medicine Shoppe also dropped its claim against Mehra's former husband because his liability had been discharged in bankruptcy. The trial judge found for Medicine Shoppe in the amount of $62,000.

The computer document at issue summarized retail pharmacy franchise license fees. One exhibit was a compilation of weekly sales reports reflecting gross receipts; this was prepared on behalf of Anjusha and filed with Medicine Shoppe as required by the license contract. The computer-generated exhibit was a monthly report, prepared by Medicine Shoppe, summarizing the license fees based on sales reports (the other exhibit) submitted by the licensee.

4. Analysis: The license fee computer document is admissible. The executive vice president testified he did not have personal knowledge of the document; however, the document was prepared in the ordinary course of business by a person at Medicine Shoppe with knowledge of the information. A witness's testimony regarding the preparation for documents admitted as business records need not be based on personal knowledge. The witness also stated that the document was prepared in Medicine Shoppe's computer system in the ordinary course of business, near or at the time the individual license fees were due.

I. *Commercial Union Insurance Co. v. Boston Edison Co.,* 412 Mass. 545, 591 N.E.2d 165 (Mass. 1992).

1. Holding: Admissibility of computer-generated models, like other scientific tests, is conditioned upon sufficient showing that computer is functioning properly, input and underlying equations are sufficiently complete and accurate and disclosed to opposing party, and program is generally accepted by appropriate scientific community.

2. Laws involved: admissibility of computer models; contract and restitution claims.

3. Facts: Commercial Union (Union) owned a building (with others) in Boston; the plaintiffs' suit involved a claim that Boston Edison had overcharged them for steam usage at the building over a five-year period. Edison did not dispute that it overcharged Union during this time period; rather, it disputed the amount of the overcharge. Edison alleged that the overcharge was the result of Union's improper installation of the steam-metering system and that Union had refused to accept Edison's reasonable settlement offer of $93,764. Edison's calculations were based on a formula

recommended by the meter manufacturer, which concluded that the meter was off by four percent, rather than the 18 percent recorded by the building manager and asserted by Union. Edison's settlement offer split the difference and calculated the overcharge using a system error of 11 percent.

Union relied on a computer simulation to calculate actual usage. The computer program, called Trane Air Conditioning Economics (TRACE), consisted of scientific formulas and algorithms concerning heat transfer, building materials, operating characteristics of heating and air-handling equipment, weather history, and other things. For its simulations, the program used data specifying, *e.g.*, a particular building's construction materials; operating patterns; architectural details; air flow; and heating, ventilating, and air conditioning equipment.

The jury found for Union in the amount of $1.5 million.

4. Analysis re whether model is hearsay: The court concluded that the computer models are to be treated like other scientific tests, and based admissibility on a sufficient showing that the computer is functioning properly; the input and underlying equations are sufficiently complete and accurate and disclosed to the opposing party; and the program is generally accepted by the appropriate scientific community. Experts may base their testimony on calculations performed by hand; there is no reason to prevent them from performing the same calculations, with far greater speed and accuracy, on a computer.

5. Analysis re scientific acceptance: The court concluded that the TRACE program, at least as used to estimate past steam-heat consumption, has been generally accepted by the relevant scientific community. Union offered evidence showing that TRACE has been used by engineers to model energy consumption in over 40,000 buildings. The most common applications for TRACE include comparing the energy efficiency of alternative heating and cooling systems and predicting a building's energy consumption. The evidence showed that the predictions are quite accurate.

   The court rejected Edison's argument that heating, ventilating, and air-conditioning engineers are not the appropriate scientific

community. *Frye v. United States* is satisfied if the "principle is generally accepted by those who would be expected to be familiar with its use." The evidence showed that approximately 80 percent of TRACE users are heating, ventilation, and air-conditioning engineers.

6. Analysis re accuracy of model: Edison's argument that the evidence is insufficient to show that the model is accurate is also without merit. The fact that the judge did not have access to the thousands of pages of coding of the TRACE program has no bearing; the judge is required to determine only whether TRACE is generally accepted by the appropriate community of scientists. The judge reviewed, among other things, depositions of three people involved in performing the simulation; three affidavits submitted by Union's experts; seven affidavits submitted by Edison's experts; articles regarding TRACE and computer evidence generally; the section of the California administrative code approving the use of TRACE; and numerous memoranda of law. The judge also conducted a three-hour voir dire of Union's chief TRACE experts. The court declined to interpret prior case law to require all the witnesses to testify in person.

J. *Deffinbaugh v. Ohio Turnpike Commission*, 67 Ohio App. 3d 692, 588 N.E. 2d 189 (Ohio Ct. App. 1990), *dismissed, no substantial constitutional question, jurisdiction motion overruled*, 55 Ohio St. 3d 703, 562 N.E. 2d 894 (Ohio 1990).

1. Holding: Computer simulations for purposes of accident reconstruction are admissible.

2. Laws involved: Ohio Rules of Evidence §§402, 702.

3. Facts: Deffinbaugh's tractor trailer struck a concrete pillar on the turnpike, causing him to suffer severe brain injury. Suit was brought by his parents alleging negligence based on design defects in construction of the turnpike exit. Expert witnesses at trial offered opinions in connection with accident reconstruction; there were no eyewitnesses. The turnpike commission also offered into evidence printouts of computer simulations for purposes of accident reconstruction.

4. Analysis: Deffinbaugh's parents asserted that the simulations were based on assumptions not in evidence and that the turnpike commission did not provide sufficient foundation for the reliability of the simulations.

   Ohio case law provides a "flexible standard" in determining the admissibility of new scientific principles, such as the admissibility of computer simulations for purposes of accident reconstruction. The trial court may determine on a case-by-case basis whether particular testimony is relevant and will aid the trier of fact. Rule 402 provides that all relevant evidence is admissible, except as otherwise provided by the Constitution and other laws. Rule 702 addresses the admissibility of scientific testimony and provides that such information may be provided by an expert witness. In this case, the trial court properly admitted the computer simulations. The first simulation represented the witness's opinion of how the accident occurred; it demonstrated that the tractor trailer, given its weight and size, traveling at 35 m.p.h., required 200 feet to reach full jackknife. The second simulation established that if the accident occurred as Deffinbaugh's expert claimed, the trailer would have come to rest left of the through lanes and would not have struck the guardrail.

   The witness was a professional engineer and expert in accident reconstruction; he provided testimony on the nature of the computer program he used, and used facts such as the weight of the trailer, its physical dimensions, and surface friction. He based his estimated speed on the accident report. This testimony is sufficient to show that the computer simulation assisted the trier of fact.

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K. *People v. Lugashi*, 205 Cal. App.3d 632, 252 Cal. Rep. 434 (Cal. Ct. App. 2d Dist. 1988), *review denied* (Feb. 16, 1989).

1. Holding: Computer-generated evidence may be admitted as business records. To establish a foundation for computer evidence, the computer equipment must be standard, the entries must be made in the regular course of business at or reasonably near the time of the event, and the information and method and time of preparation must indicate trustworthiness. To determine

admissibility, computer systems may be scrutinized more thoroughly than systems that merely retrieve information.

2. Law involved: Cal. Evid. Code §1271 (business records exception); Cal. Pen. Code §§487, subd. 1, 12022.6, 484h, subd. (b) (receiving payment for items falsely represented to credit card issuers as having been furnished).

3. Facts: Six computer tapes containing complete account information for up to 60,000 Bank of America Visa credit card customers were stolen. The stolen information was copied, sold, and reproduced into counterfeit credit cards. Over a month's time, fraudulent charges totaling over $67,000 were made at defendant's oriental rug stores using counterfeit credit cards without knowledge or consent of the legitimate account holders. Defendant admitted to the police making the sales or completing the paperwork on most of the charges. Many of the transactions involved indications of fraud.

   The transactions were entered at defendant's stores on a credit card verification terminal and recorded electronically on computers maintained by the issuing banks, third-party companies that conduct verification for banks, and Wells Fargo, with which defendant maintained an account. Each night, Wells Fargo runs a program which reorders entries by customer and merchant account numbers. A tape is made from which a microfiche record is prepared. A bank employee working in Wells Fargo's loss control division and familiar with the system testified as to the process of tape and microfiche production.

   Defendant did not challenge the accuracy of the computer records, but argued the evidence was consistent with innocent behavior. He argued he was victimized by counterfeit card producers who posed as legitimate customers and to whom he sold merchandise for each fraudulent transaction.

4. Analysis re foundation: Defendant argued that the witness lacked sufficient personal knowledge to explain the computer records and that the state failed to offer evidence on the reliability of the hardware and software used by Wells Fargo, as well as internal maintenance and accuracy checks. The court rejects this argument. Most state courts and some federal courts have adopted a "better

reasoned and more realistic test" for admissibility of computer evidence. Defendant cites *People v. Bovio, infra* Section III.N, and other cases for the premise that "[t]o establish a foundation, it must be shown that the computer equipment is standard, that the entries are made in the regular course of business at or reasonably near the time of the happening of the event recorded, and that the sources of information and the method and time of preparation are such as to indicate trustworthiness and justify admission." But one court found the erroneous admission of computer evidence harmless; another upheld admission despite the absence of testimony regarding hardware, software, or its reliability, maintenance, and accuracy, and found any conceivable error harmless. The *Bovio* court [*infra* section III.N], although reversing a conviction due to erroneous admission of computer evidence, did so "primarily because '[s]ystems, like the one apparently in question, which perform calculations must be scrutinized more thoroughly than those systems which merely retrieve information.'"

Defendant's proposed test "incorrectly presumes computer data to be unreliable, and, unlike any other business record, requires its proponent to disprove the possibility of error, not to convince the trier of fact to accept it, but merely to meet the minimal showing required for admission."

Although the witness was not the official custodian of the records or a computer expert, she was an experienced credit card fraud investigator familiar with merchant authorization terminals, counterfeit cards, credit card sales, and the manner in which sales are recorded. She personally produced the printed records from the microfiche. Although she did not physically convert the tape into microfiche, she worked and spoke with those who did. She understood the records and interpreted them in great detail.

L. *Victory Memorial Hospital v. Rice*, 143 Ill. App. 3d 621, 493 N.E.2d 117 (Ill. App. 1986).

1. Holding: It was error to exclude computerized hospital bills as business records in a suit to recover payment from a patient because a proper foundation for admitting records had been presented.

2. Facts: Victory Memorial Hospital brought an action against Rice seeking payment for services. Rice received medical services and physical therapy treatments. The hospital received some insurance payments, but other charges were not paid. The trial court ruled that there was not sufficient evidence presented to establish the reasonable value of the services rendered or that the services reflected on the bill were actually performed on Rice, but the appeals court rejected that ruling.

3. Argument: The hospital argued that the trial court erred in ruling that computer-generated hospital bills could not be allowed into evidence as business records and that the only standard for assessing the reasonableness of hospital charges is what is usual and customary for hospitals in the area. Even if the standard applied by the trial court was correct, the hospital argued that it presented sufficient evidence regarding charges of other hospitals in the area and established that certain services were in fact rendered to Rice.

4. Analysis re foundation: The appellate court concluded that the proper foundation was presented to establish that the source of information and method of preparation indicated trustworthiness and supported admission of the entire computerized bill. The trial court must be satisfied from the foundation testimony that the sources of information, method, and time of preparation indicate trustworthiness and justify admission; in this case, the trial court erred in not admitting the computerized bill into evidence as a business record based on the foundational evidence offered. The jury would still be free to accord the bills as much weight as in their opinion they deserved.

   The trial court had found there was insufficient proof that the items on the bills represented services actually performed on Rice; the court questioned the reliability and trustworthiness of the data before the information had been entered into the computer.

   a. The appellate court discussed that the only method of verifying information would have been to match the computerized bill against the original entry data, a time-consuming and expensive process. The record indicated that a witness produced approximately 30 slips indicating

laboratory tests that had been performed on Rice. The witness matched the slips to the date and charge on the bill. The original slips were in five parts; the last part went to data processing to be entered into the computer. The part that went to the billing department contained only numbers, which were fed into the computer.

b. The trial court questioned the verification testimony because the slips the witness produced were not the actual number-coded slips used to enter data. Because the five slips contained the same information and the slips produced could be matched to the date and charge on the bill, the supporting documentation verifying the trustworthiness of the information was sufficient in the appellate court's opinion to show that Rice had been given the service for which he was charged.

M. *Palmer v. A.H. Robins Co.,* 684 P. 2d 187 (Colo. 1984).

1. Holding: The trial court did not err in admitting computer records that a manufacturer of IUDs had compiled on the issue of septic abortions. The trial court, however, should not have limited the admissibility of the computer records to the issue of notice with respect to septic abortions predating the plaintiff's injuries and to the statistical significance of all entries to the issue of defect and causation. The computer printout of doctors' records should have been admitted for the truth of the matters asserted therein. The records are admissible under the business records exception to the hearsay rule and, in addition, are sufficiently reliable and trustworthy to be admitted under the general hearsay exception as well.

2. Law involved: Case law interpreting business records exception to the hearsay rule and the general hearsay exception based on practical considerations of trustworthiness and necessity (no state business records statute at time of case, state rules of evidence not yet effective).

3. Facts: A.H. Robins Co. challenged the admission of an extensive computer printout of reports the company had compiled regarding septic abortions experienced by IUD users. The reports were kept

and recorded in the company's files by a doctor as part of her regular duties as "product monitor" for the IUD. Robins conceded the printouts were authentic and trustworthy, but argued that a proper foundation had not been laid.

4. Analysis: The court concluded the computer records were admissible under the business records exception and the general exception to the hearsay rule. The records were kept in the ordinary course of business; the record indicates that the information was accurately entered; and defendant conceded the trustworthiness of the documents.

   a. **business records exception:** Although early common law "posed rigid foundation requirements," Colorado has taken a "less technical approach" to the business records exception. Trustworthiness and necessity are key components:

      "In the case of computerized business records, which are frequently prepared by a business on the basis of information transmitted from numerous sources, practical considerations of trustworthiness and necessity come to the fore. The circumstantial probability of trustworthiness lies in the fact that these records will usually be made with a sufficient degree of care and accuracy as will permit them to be relied upon for commercial purposes. The necessity principle is equally present, namely, the inconvenience, if not impossibility, of summoning each individual whose information has been entered in the final record."

   b. **adequate foundation needed:** Computer-generated business records will qualify for the business record exception when supported by an adequate foundation (citing several state cases, *e.g., King v. State ex rel. Murdock Acceptance Corp., infra* Section III.R).

      "With these considerations in mind, courts have held that computer generated business records will qualify for the business record exception when supported by an adequate foundation showing that: (1) the computer entries were made by a business in the regular course of its business; (2) those participating in the record making were acting in the

routine of business; (3) the input procedures were accurate; (4) the entries were made within a reasonable time after the occurrence; and (5) the information was transmitted by a reliable person with knowledge of the event reported."

c. **general hearsay exception:** The computer records contain all essential elements for admission under the general hearsay exception previously sanctioned by Colorado case law. They are trustworthy, having been prepared under defendant's direction. The information sources are reliable and defendant has conceded trustworthiness. Submission of the information in tabulated and summarized form was the only practical way to present the evidence to the jury.

N. *People v. Bovio,* 118 Ill. App. 3d 836, 74 Ill. Dec. 400, 455 N.E. 2d 829 (Ill. App. 2d Dist. 1983).

1. Holding: Admission of computer-generated bank records by the trial court as a business record exception was reversible error because a proper foundation had not been laid. The court observed that "the use of a keyboard in conjunction with a visual display screen is more error-free than a system that utilizes keypunched cards because of reduced human involvement."

2. Laws involved: Illinois deceptive practices statute (Ill. Rev. Stat. 38-16-1(b)) and "theft by deception" statute (Ill. Rev. Stat. 38-17-1(d) (1981)).

3. Facts: The defendant delivered a check in payment for a load of diesel fuel knowing that check would not be paid due to insufficient funds in his account.

4. Argument: Defendant argued that a proper foundation had not been laid for admission of a computer-generated bank statement for his company. The court noted that computer-generated business records are admissible under the business records exception if a proper foundation is laid. The court reviewed rules for establishing a foundation for admission of computer-generated business records (computer equipment is standard, entries made in the regular course of business at or reasonably near time of event,

and sources of information and method and time of preparation indicate trustworthiness and justify admission).

5. Foundation testimony: A bank cashier testified that bank customers receive a monthly statement. She described the route a check takes once a customer drafts it on an account at the bank: payee takes check to his or her own bank; bank forwards it to Federal Reserve Bank; Federal Reserve processes it and sends it to a data center. The data center makes computations of transactions for the account; makes an original microfiche, makes a duplicate microfiche for the bank, and prints out a paper statement for the customer. She did not describe the equipment used at the data center, the method for entering deposits or withdrawals, or the type of program that is used. The microfiche is kept and relied on by the bank in its normal course of business. The cashier verified the accuracy of defendant's bank statement by checking it against the bank's microfiche.

6. Analysis: The cashier's testimony did not demonstrate that the computer equipment at the data center was standard and that the method of preparation at the data center was trustworthy. Although she testified that other banks used similar systems, this is insufficient to prove that the particular equipment at the data center used by this bank is standard and accurate. Her testimony does not indicate "how transaction information was entered into and processed through the computer system at the data center, which would verify the accuracy of the output on the microfiche. . . No testimony established that the computer program at the data center was standard, unmodified, and operated according to its instructions." Thus, the trial court erred in admitting the bank statement.

   Insufficient foundation for admitting the computerized bank statement constituted harmful error. The bank statement was introduced to support the state's theory of deception, a necessary element of theft by deception under the state statute. It was the basis for much of the cashier's testimony. The prosecutor referred to the information in the bank statement several times during closing arguments as showing that defendant did not have enough funds. The jury had possession of the bank statement.

O. *Westinghouse Electric Supply Co. v. B.L. Allen, Inc.*, 138 Vt. 84, 413 A.2d 122 (Vt. 1980).

1. Holding: (1) A computer printout need not have been prepared at or near the time of the underlying events; and 2) questions concerning accuracy of the printout do not affect admissibility where there are sufficient indicia of trustworthiness concerning the identity of the printout, the sources of information, and the manner and time of preparation.

2. Laws involved: Uniform Business Records as Evidence Act, 12 Vt. Stat. Ann. §1700(b) (business records exception to hearsay rule).

3. Facts: B.L. Allen, Inc. (Allen) did some electrical work as a subcontractor on the construction of a college performing arts center. Westinghouse was Allen's supplier. Allen was paid by the general contractor for its work. Allen, however, then had financial difficulties. Westinghouse learned that Allen, which owed Westinghouse for supplies used in several jobs including this one, was having difficulty collecting money owed it. Allen arranged with Westinghouse for a payment schedule; Allen's checks, however, were dishonored by the banks. Eventually, Westinghouse obtained a judgment against Travelers Indemnity Company, which was the surety on a payment bond between the general contractor and the college.

   On appeal, there were various issues in contention relating to the payment bond and the surety. The computer printouts at issue were offered by Westinghouse as proof of Allen's account debt and listed items claimed on the account.

4. Analysis: The court rejected Allen's argument that the computer printout showing items on Allen's account was improperly admitted into evidence. The printout was prepared six months after Westinghouse had made its last shipment to Allen and five months after Allen's last payment. Westinghouse sent similar computer printouts to Allen as monthly statements of account. Allen did not challenge the qualifications of the credit department personnel who testified as to the identity, preparation, and sources of information in the printout. Rather, he objected to admission of the printout on the grounds that it was not made at or near the time

of the events recorded; it was not kept in the regular course of business; and (3) it did not accurately reflect information contained in the original invoices.

a. **at or near the time of the events:** The court concluded that whether the printout was made at or near the time of the underlying events does not affect admissibility. The evidence showed that during much of the time it dealt with Allen, Westinghouse maintained its account files in a computer database and that its credit department regularly used this file to manage Allen's account. The printout in this case may have been made after all regular dealings with Allen, but that does not affect admissibility in light of testimony that the computer was used for storage and data compilation during the underlying transactions. As *Transport Indemnity Co. v Seib., infra* Section III.S, has noted, the Uniform Act does not require any "particular mode or form of record."

b. **regular course of business:** The court concluded that the printout was made in the regular course of business. As in *Transport Indemnity*, the fact that the information was retrieved from a computer for purposes of the trial is not the key issue. The information and calculations were made in the usual course of business and for the purpose of that business. The fact that the Westinghouse printout of the Allen account was broken down according to the job for which each item was incurred after it had stopped shipments does not change this result. This case is similar to *United States v. Russo, infra* Section IV.K, in which the court found admissible information on medical insurance claims in a printout prepared 11 months after the statistical period; the information was "arranged in a predetermined manner and classified according to medical procedures." Westinghouse's breakdown was by job numbers included in the original entry data. As in *Russo,* the category selected was rational under the circumstances.

c. **accuracy of printout:** The printout statement of account was accurate to the best knowledge of the foundation witness. Even if a foundation witness is unfamiliar with operation of

the computer information storage process, but has a general understanding of the accounting procedures and personal familiarity with the account, the printout should be admitted into evidence unless there are other factors that affect the printout's trustworthiness. Allen's questions concerning the accuracy of the printout do not rise to the level of an abuse of direction by the trial court. There are sufficient indicia of trustworthiness concerning the identity of the printout, the sources of information, and the manner and time of preparation for the trial court to have admitted the document.

P. *Grand Liquor Co. v. Department of Revenue*, 67 Ill. 2d 195, 367 N.E. 2d 1238, 10 Ill. Dec. 472 (Ill. 1977).

1. Holding: An estimated correction of tax owed based on a computer printout was not, standing alone, to be accorded *prima facie* evidentiary status as to the correctness of the amount of the tax due, absent some background information on the accuracy of the printout. Computer records may be admissible, but a proper foundation must be laid.

2. Law involved: Retailers' Occupation Tax Act (Ill. Rev. Stat. 1973, §§120-440 *et seq.*); Municipal Retailers' Occupation Tax Act (Ill. Rev. Stat. 1973, §24-8-11-1).

3. Facts: Plaintiff liquor company received a final assessment for an alleged tax deficiency. The Department of Revenue's auditor who corrected the returns stated that he based his correction on a computer printout on file with the state as to payment of the retailers' occupation tax and municipal retailers' occupation tax. The auditor testified that the correction was based on "sales tax returns, monthly filing of these returns, (and) the receipts." He asserted that an additional 20% fraud penalty was added to the estimated assessment based on the computer results. The auditor acknowledged that he did not know what data were fed into the computer and that the end-result answer was controlled by the computer and measured by the conditions of and basic input to the electronic machine. The trial court confirmed the agency's assessment; the appellate court, however, held that before the Department's correction of the retailers' occupation tax returns

based on the computer printout is deemed prima facie proof of its correctness pursuant to the Retailers' Occupation Tax Act, the Department must explain the method it employed in reaching the assessment.

4. Analysis: Section 4 of the Retailers' Occupation Tax Act provides that the Department of Revenue is to review tax returns and correct them where appropriate. The Department's information is considered *prima facie* evidence of the correctness of the amount of tax due. The Department may show proof of the corrections by showing a copy of the Department's record. The "reproduced copy shall without further proof, be admitted into evidence before the Department or in any legal proceeding and shall be prima facie proof of the correctness of the amount of tax due." Prior to the use of computers in tax deficiency assessments, corrected returns were produced by Department auditors' personal investigations. At a hearing to challenge additional taxes imposed by a correction, the auditor who corrected the returns or someone personally familiar with the case would answer questions. The court concluded that the legislature did not intend with this provision to allow any document styled by the Department as a "corrected assessment" to be *prima facie* evidence against a taxpayer, especially where the evidence "lacked any background information on the accuracy of the computer printout."

5. **Note:** *Grand Liquor* is generally relied upon only for cases involving computerized tax records; the *prima facie* rule still applies to other kinds of tax documents.

Q. *People v. Gauer,* 7 Ill. App. 3d 512, 288 N.E. 2d 24 (Ill. App. 2d Dist. 1972).

1. Holding: In general, computerized evidence such as telephone records can be admitted under the business records exception if a proper foundation is laid. A proper foundation must satisfy the court that the sources of information, the method, and time of preparation are such as to indicate trustworthiness and justify admission.

2. Law involved: Business records exception to hearsay rule; disorderly conduct under Illinois criminal law, Ill. Rev. Stat. §38-26-1(a)(2).

3. Facts: Defendant, an employee of Illinois Bell Telephone Company, was convicted of disorderly conduct and fined $100. He was charged during a strike against Illinois Bell for making telephone calls to two female employees. Defendant was observing the strike; the complaining witnesses continued working. One of the complaining witnesses testified that she was an annoyance call specialist and had personal knowledge of what a tracer is, and a general idea of how the tracer works. She testified that a trouble recorder is put on the line of the receiving party, that when a call comes in the card will "click" giving the location of the calling phone and the time, date, and location to the receiving phone. The state called as a witness the keeper of records for Illinois Bell who had direct supervision and control of all records. The records he brought with him were two sets of punched "IBM Trouble Recorder Cards," which were business records of Illinois Bell, made in the ordinary course of business at or about the times and dates reflected on the cards. He testified that "our records are reliable, and we place a lot of faith in our records."

4. Analysis: The court concludes that the testimony is insufficient to establish a proper foundation for the telephone records. The court holds however that, in general, computerized evidence can be admitted: "In the light of the general use of electronic computing and recording equipment in the business world and the reliance of the business world on them, the scientific reliability of such machines can scarcely be questioned." For example, in *King v. State ex rel. Murdock Acceptance Corp.*, *infra* Section III.R, computer printouts were held to be admissible as business records. However, as the court noted, "the method of their preparation was fully testified to and a complete and comprehensive explanation of its meaning was given." In this case, the court concludes, the evidence did not show that the information sources, method, and time of preparation were sufficiently trustworthy.

R. *King v. State ex rel. Murdock Acceptance Corp.*, 222 So. 2d 393 (Miss. 1969).

1. Holding: Computer printouts are admissible, if relevant and material, under the business records exception to the hearsay rule if it is shown that the computing equipment is recognized as standard equipment, the entries are made in regular course of business at or reasonably near the time of the event recorded, and

foundation testimony satisfies the court that the sources of information, method, and time of preparation indicate its trustworthiness and justify its admission.

2. Laws involved: Business records exception to hearsay rule.

3. Facts: Murdock Acceptance Corp. financed dealers engaged in selling automobiles and mobile homes through the purchase of conditional sales contracts. Murdock became a creditor in connection with several contracts Murdock purchased from a person who became bankrupt. As part of a settlement, the Putts, co-signers on the debtor's contracts, agreed to execute a note to Murdock for $11,000, secured by a deed of trust. The note and deed of trust, purportedly signed by the Putts, were delivered to Murdock. The deed of trust was acknowledged before King, who entered his certificate of acknowledgement on the document. The Putts made several payments and then defaulted. The Putts claimed they did not sign the note or the deed of trust and that King's notarial certificate on the deed of trust was false.

   To prove the amounts paid on the note in connection with its claim for damages, Murdock introduced the original contracts and computer sheets printed out by an electronic data-processing machine. The sheets showed a complete record for each account and included various data for each conditional sales contracts (*e.g.*., account number, gross balance due, amount paid, etc.). The computer printouts were admitted after testimony by Murdock's assistant treasurer and accounting manager, the person in charge of the data-processing department. He provided extensive testimony regarding the computer system setup at Murdock, the nature of the equipment, and the process by which records are maintained and produced.

4. Analysis: King argued that the computer printouts are not the original records and thus are inadmissible. The court observed that the issue is whether the rule cited by King, articulated in a 1929 Mississippi case, applies, or whether the court should "adapt the rule formerly applied to conventional books so as to accommodate the changes involved in electronic data processing." Records stored on magnetic tape are unavailable and useless except by means of computer printouts. Allowing the printouts is not actually a

departure from the conventional rule, but rather is "extending its application to electronic record keeping." The court sets out its standard for admitting computer business records: (1) the computing equipment must be recognized as standard equipment; (2) the entries must be shown to be made in the regular course of business at or reasonably near the time of the event recorded; and (3) the foundation testimony must satisfy the court that the sources of information, method, and time of preparation were such as to indicate its trustworthiness and justify its admission.

S. *Transport Indemnity Co. v. Seib*, 178 Neb. 253, 132 N.W.2d 871 (Neb. 1965).

1. Holding: No particular form of record is required by business records law for computer evidence to be admissible; it need only comply with requirements of statute. The testimony of the insurance company accounting director that claims records were prepared under his direction and electronically stored on tape laid a proper foundation.

2. Laws involved: Business records exception to hearsay rule.

3. Facts: Seib, the operator of a fleet of trucks, challenged the admission into evidence the means by which his insurance premium had been calculated on grounds of insufficient foundation. The foundation had been laid by the testimony of the insurance company's accounting director, who had explained in detail the calculation process and how the computer made the appropriate calculations. The computer system took composite totals of losses allocated to premiums, subjected them to the contract formula, computed the total premium owed for the year, deducted payments made, and calculated the amount due. This bookkeeping information was sent quarterly to Seib and was stored on electronic tape.

4. Analysis: The court concludes that the computer records were made as the usual part of the insurance company's business and the keeping of these records were an indispensable part of the company's business. The purpose of the business records statute is to "permit admission of systematically entered records without the necessity of identifying, locating, and producing as witnesses the individuals who made entries in the records in the regular course

of the business rather than to make a fundamental change in the established principles of the shop-book exception to the hearsay rule." The foundation testimony here follows the statute and is directly in the scope of the purpose of the statute. It was not necessary to produce and identify the witnesses who originally supplied the information as to losses that are recorded on the tape. The information was properly identified, the mode of its preparation was described, and it was made in the ordinary course of business. The computer performs the bookkeeping task in the usual course of business; the information and calculations are simply stored on tape rather than paper, and may be retrieved at any time. No particular mode or form of record is required. The statute was intended to bring the realities of business and professional practice into the courtroom and the statute should not be interpreted narrowly to destroy its obvious usefulness.

IV. ADMISSIBILITY OF ELECTRONIC DATA – Federal Cases

A. *United States v. Casey*, 45 M.J. 623 (U.S. Navy-Marine Ct. Crim. App. 1996), *review denied*, 46 M.J. 424 (U.S. Armed Forces 1997).

1. Holding: Printouts from computer system relating to telephone bills are admissible.

2. Laws involved: Military version of business records exception to the hearsay rule, Mil. R. Evid. 803(6); Uniform Code of Military Justice, 10 U.S.C. §892 (dereliction of duty), §907 (making a false official statement), §921 (larceny), and §934 (communicating a threat).

3. Facts: Casey was the front desk supervisor and "phone czar" at the bachelor enlisted quarters (BEQ), Naval Air Station, Pensacola, Florida. Casey apparently did not turn in as required cash paid to him by a number of enlisted men for their telephone bills. Casey entered an incorrect credit code into the system to cover up his thefts.

   The prosecution entered into evidence computer records of telephone bills. To authenticate and lay a foundation for the computer records, the government called the assistant leading chief petty officer at the BEQ. The witness testified about the procedures

used to update data in the computer system. He also testified about the night-audit process, which served as a double-check within the system. The witness testified that there were some problems with operation of the computerized reservation and telephone system in its early months of operation; he also testified that BEQ management relied upon the system and found it to be generally satisfactory. The defense called a computer-science expert who testified that BEQ management made little provision for computer security. He testified that a hacker equipped with a home computer and modem could have gotten into the system and changed information in the database. Other witnesses testified that bills were often wrong and the system occasionally crashed.

A military judge, serving as a general court-martial, convicted Casey of dereliction of duty, making a false official statement, communicating a threat, and larceny.

Casey alleged on appeal that the judge abused his discretion when he admitted telephone bills offered into evidence because the testimony of a computer expert and the evidence offered at trial established that the records were untrustworthy and thus did not fall within the business records exception to the hearsay rule.

4. Analysis re trustworthiness: The military judge did not abuse his discretion in admitting the computer records into evidence under MRE 803(6). The court rejected Casey's claim that there was a "complete breakdown of the computer system." A computer system does not have to be foolproof, or even the best available, to produce records of adequate reliability. The computer records corroborated the witnesses' testimony that they had paid Casey a certain amount of cash on specific dates. The system was a commercially developed computer system which other businesses within and outside the government relied upon for billing and reservation processes. Errors in the records attributable to incorrect data entry or defects in the operation of the computer program go to weight, not admissibility.

B. *Brown v. Town of Chapel Hill,* 79 F.3d 1141, 1996 WL 119932 (4th Cir. Mar. 19, 1996) (unpublished decision).

1. Holding: Computer printouts of hiring criteria and supervisor's memorandum regarding hiring recommendation are sufficiently trustworthy to be admissible under the business records exception, and fact that the documents are not date-stamped in any way does not affect authenticity.

2. Laws involved: business records exception to the hearsay rule.

3. Facts: Brown, an African-American, worked for the Town of Chapel Hill as a bus driver. She applied for a bus driver promotion posted internally by the Department of Transportation. The department selected a white applicant for the job. After pursuing her administrative remedies and filing a grievance with the Equal Employment Opportunity Commission, Brown filed suit in federal district court. A jury found that she was not a victim of unlawful discrimination.

   The trial court admitted into evidence two items written by the superintendent. The first item was a list of hiring criteria for the Bus Driver II position; the second document contained the superintendent's hiring recommendation and her analysis of each applicant's rating on the hiring criteria (Brown was ranked second). Brown asserted on appeal that the documents were prepared after-the-fact as a means of legitimating the discriminatory actions. Brown also asserted that the memoranda were insufficiently trustworthy to fall within the business records exception.

4. Analysis re trustworthiness: The court concluded that the district court did not abuse its discretion in admitting the exhibits. The town personnel director described the town's personnel practices and, unlike accident reports prepared with an eye toward litigation, these records were routine descriptions of day-to-day operations of the personnel and transportation departments. Although the truthfulness of documentation can always be called into question, such possibilities are insufficient to discredit the district court's finding that the memoranda were sufficiently trustworthy.

5. Analysis re authenticity: The court concluded that the fact that these documents were "merely" computer printouts, rather than signed or stamped forms, does not affect the authenticity of the documents. Citing *United States v. Vela, infra* Section IV.H, the court noted that computer-generated evidence is no less reliable than original documents and should be admitted under the business records exception as long as a proper foundation has been laid. Although the documents in this case were not date-stamped, are computer printouts rather than business forms, and were not signed or dated by hand, the town personnel director testified that internal documents generally were not stamped.

C. *United States v. Berman*, 1986 WL 9239 (S.D. Ohio May 6, 1986), *rev'd on other grounds*, 825 F.2d 1053 (6th Cir. 1987).

1. Holding: Computer transcript showing notices of assessment and demands for payment is admissible, but is not sufficiently reliable to have the same conclusive weight as a certified public record of the United States.

2. Laws involved: conclusiveness of government public records; various provisions of the federal tax code including 26 U.S.C. §6321 (federal income tax lien); 26 U.S.C. §6203 (procedures for making assessment against taxpayers).

3. Facts: The government brought this action against the Bermans to resolve several issues pertaining to their 1972 tax return. The government sought to reduce certain income tax assessments to judgment; foreclose on a tax lien on a parcel real estate; set aside an allegedly fraudulent conveyance of the property; and foreclose on a another tax lien. The government's first two objectives required proof that certain statutory procedures were followed. Among other testimony, the government offered a portion of a computer transcript of the Bermans' Internal Revenue Service (IRS) account, which was interpreted for the court by an employee of the IRS's criminal investigation division.

   At trial, the government offered the computer transcript as proof that the IRS assessed the unpaid balance of the taxes due for 1972 against the Bermans and to prove that the required notices of assessment and demands for payment had been sent to the

Bermans. The IRS witness testified as to how the IRS makes assessments and how the information is transferred from a tax return to the computer system. She testified that the printout indicated that the computer had recorded various assessments against the Bermans for tax penalties plus interest.

The trial court determined that the computer transcript was insufficient to prove the government's position; because the government failed to carry its burden of proof, the federal tax liens could not be foreclosed. In addition, the trial court held that since notice and demand are prerequisites to any action to collect taxes, the government was not entitled to reduce the assessments to judgment.

The case was reversed on appeal, but not on grounds involving the computer-related testimony. On appeal, the government did not challenge the trial court's finding that notice and demand for payment of the assessments had not been mailed to the Bermans or the court's refusal to enforce the tax liens. Rather, the government challenged the trial court's conclusion that the mailing of notice of assessment and demand for payment were conditions precedent to the government's right to maintain a civil action to collect the tax liabilities. The court of appeals agreed with the government, holding that notice of assessment and demand for payment would only be necessary if the government wanted to proceed administratively to collect the tax due.

4. Analysis by trial court: The computer transcript is not an official IRS form that is authenticated and verified as accurate by the IRS. Such official government records, the court noted, are highly probative evidence and suffice, absent evidence to the contrary, to establish that assessments were properly made and that required notices and demands were properly sent. The government argued in this case that the computer printout should be given the same conclusive effect as an official record of the United States government. The trial court concluded that this computer transcript was not sufficiently reliable to have such conclusive effect.

   The trial court concluded that the assessments had been made, but the transcripts were not sufficient evidence to carry the

government's burden of proof. This was not an issue of admissibility; citing *United States v. Vela, infra* Section IV.H, and *United States v. Scholle, infra* Section IV.J, the court noted that any shortcoming in the accuracy of the transcripts goes to the weight given to the evidence, not to admissibility.

In this case, the court concluded that the computer transcript contained inaccuracies, and thus the notice of assessment and demand for payment had not been proven by the government. The transcript had entries indicating that a second notice of assessment had been sent to the Bermans on three different dates, although the witness testified that at least two of those "second notices" had not been sent. She could not explain why these notations appeared on the printout; she speculated it was the result of year-end computer functions. The transcript was offered to prove that the computer identified that a notice should be sent, it generated the notice, an IRS employee took the notice and placed it in an envelope, someone addressed the envelope, and the envelope was mailed to the correct address. The government's own witness testified that in at least two instances when the computer stated that it had sent those notices, she was certain that the procedure had not been followed. The substance of the transcript was not such that it should benefit from a presumption of regularity that might be given to a certified, public document of the United States.

D. *United States v. Hutson*, 821 F.2d 1015, 23 Fed. R. Evid. Serv. 812 (5th Cir. 1987).

1. Holding: The district court properly admitted computer printouts as a business record exception to the hearsay rule.

   a. There is no requirement that the witness laying the foundation be the one who entered the data or be able to personally attest to its accuracy.

   b. A printout does not necessarily have to be made at the time the underlying transaction actually occurred.

   c. The fact that the defendant manipulated bank computer records does not make the bank's offering of computer records as evidence against her untrustworthy.

2. Laws involved: business records exception to hearsay rule (FRE 803(6); non-occurrence of event exception to hearsay rule (FRE 803(7)); 18 U.S.C. §656 (embezzlement).

3. Facts: Defendant Hutson was vice president and cashier at a bank in Houston. An investigation showed that Hutson had juggled computer entries, drawn check on invalid accounts, and cashed fundless cashier checks and money orders. She was convicted of embezzlement.

   Among a number of items on appeal, Hutson objected to admission of several computer records on foundation grounds.

4. Analysis: The court rejected Hutson's arguments.

   a. **mere accumulations of hearsay:** The computer documents were compiled from the bank's records. Because the records from which the computer documents were themselves business records, there was no accumulation of inadmissible hearsay. There is no requirement that the witness laying the foundation be the one who entered the data or be able to personally attest to its accuracy.

   b. **made at or near the time of the transaction:** Each printout had a date indicating when it was printed; in at least one instance, this date was seven or eight months after the business transaction took place. However, the printouts also showed the date when the recorded banking transaction occurred. This is sufficient under Rule 803(6).

   c. **trustworthiness under FRE 803(6) and 803(7):** Hutson argued that the evidence showing that she herself manipulated the computer records, plus the fact that not all of the missing funds had been accounted for, made the records untrustworthy. The bank's witness testified that access to the computer was limited by use of an access code. The court noted that the Fifth Circuit had rejected a similar argument in a case involving falsification of billing memoranda; moreover, the district court has great latitude on the issue of trustworthiness. In this case, additionally, access to the computer was restricted.

E. *United States v. Glasser*, 773 F.2d 1553, 19 Fed. R. Evid. Serv. 1336 (11th Cir. 1985).

1. Holding: (1) Sufficient foundation was laid through testimony of bank official for admission of computer printouts that contained compilations of transactions relating to mortgage accounts; (2) existence of air-tight security system is not a prerequisite to admissibility of computer printouts.

2. Laws involved: business records exception to hearsay rule; 18 U.S.C. §647 (embezzlement); 18 U.S.C. §1006 (making false entries in records).

3. Facts: Defendant Glasser was convicted of embezzling mortgage payments and making false entries in bank records. While Glasser was a mortgage loan supervisor, a bank customer notified the bank that he had not received credit for a mortgage payment. The director of internal auditing investigated and discovered that while a payment on the account was missing, the account was not delinquent; someone using Glasser's teller number had advanced the payment's due date by a month. Bank records also indicated that the customer's check had been cashed. Teller numbers were supposed to be kept confidential, but the practice was not always followed. The auditing director asked Glasser to investigate. Subsequently, someone using Glasser's teller number made 50-60 computer transactions in an effort to balance the customer's account.

   After Glasser was terminated, additional mortgage accounts were found to be falsified in a similar fashion. Additional evidence pointed to Glasser, including testimony by tellers that they had cashed for Glasser checks made payable to the bank.

   Glasser objected to admission of computer printouts containing compilations of various transactions relating to the mortgage accounts. Her objection was on the grounds that trustworthiness of the records had not been established through proper foundation testimony.

4. Analysis: Computer business records are admissible as long as (1) the records are kept pursuant to routine procedures designed to

assure accuracy; (2) they are created for reasons that would tend to assure accuracy; and (3) they must not themselves be mere accumulations of hearsay or uninformed opinion. These conditions were satisfied in this case. The testimony of the bank's director of internal auditing regarding the events and the steps he took provided a sufficient foundation for admission of the printouts *(note: the court does not provide analysis at this point as to what it was that proved sufficient).*

The auditing director's testimony did indicate some problems in security measures taken by the bank to control computer terminal access, in that teller identification numbers were not kept confidential. However, the existence of an air-tight security system is not a prerequisite to the admissibility of the computer printouts. Such a requirement would make it almost impossible to admit computer-generated records; the objecting party would have to show only that a better system was feasible.

F. *United States v. Miller*, 771 F.2d 1219, 19 Fed. R. Evid. Serv. 657 (9th Cir. 1985).

1. Holding: Computer-generated telephone billing records are admissible under the business records exception to hearsay rule even though the foundation witness had no knowledge regarding maintenance and technical operations of the computer that generated the records.

2. Laws involved: business records exception to the hearsay rule; conspiracy to fix prices under Sherman Antitrust Act (15 U.S.C. §1).

3. Facts: Continental Fuel Company, Bliesner, and Miller were convicted after a jury trial of conspiring to fix the retail price of gasoline in Idaho in violation of the Sherman Act and were fined. The defendants admit that they regularly discussed prices and tried to persuade their competitors to raise prices, but contend that they never agreed to fix prices.

At trial, the government introduced two types of evidence to establish the existence of a conspiracy: evidence of the defendants' intent and evidence of the effects of the agreement. On the first point, current and former employees of the defendant companies

and their competitors testified either that they had been parties to the conspiracy or that they refused to cooperate when approached by the defendants. On the second point, the government introduced evidence showing price fluctuations during the periods covered by the indictment and telephone records indicating that conversations between the defendants occurred immediately prior to fluctuations in the price of retail gasoline.

On appeal, the defendants make a number of arguments concerning the constitutionality of the Sherman Act, insufficiency of the indictment, alleged hearsay testimony of various witnesses, among other things. The computer printouts objected to were telephone records and excerpted subscriber information which the trial court admitted under the business records exception to the hearsay rule.

4. Analysis re foundation and personal knowledge of witness: The court rejects as "meritless" defendants' argument that because the foundation witness (telephone company billing supervisor) testified that he had no knowledge regarding the maintenance and technical operation of the computer that generated the records, and because the records were generated by another office of the telephone company, the witness was not a proper custodian through which the records could be introduced. It is not necessary that the computer programmer testify to authenticate computer records (citing *United States v. Young Bros., Inc., infra* Section IV.G The witness testified that he was familiar with the methods by which the computer system records information. He testified that he was the custodian of the records, that they had been made contemporaneously by the computer, and that they were made in the regular course of business.

5. Analysis re authenticity of telephone bills: The defendants challenged the admission of copies of telephone bills received by an oil company and introduced through the company's vice-president, arguing that the witness was not a proper custodian or other qualified witness who could attest to the authenticity of the customer copies of the records. The court concluded that this case differs from cases cited by defendants, such as one where foundation was provided by a company employee who had no knowledge of how the business made or maintained its bills or any

interest in verifying accuracy. Moreover, the cases cited by defendants did not contain circumstances that would demonstrate the trustworthiness or accuracy of the records or testimony regarding preparation of the records. In this case, a proper foundation was established through the billing supervisor's testimony regarding the method of preparation and accuracy of the records, and there is no evidence in the record suggesting reasons to doubt the trustworthiness of the records.

6. Analysis regarding subscriber information excerpts from microfiche records: An assistant supervisor in the telephone company's security department testified that at the request of the government's counsel, she prepared exhibits summarizing subscriber information stored on microfiche. This information showed the name, address, and telephone number of each subscriber and the date service was initiated. The defendants objected that admission of these lists violated FRE §§803(6), 1002 (the best evidence rule), and 1006 (summaries of voluminous documents).

   On the merits, the court agreed with all three of the defendants' contentions. The court agreed that the lists should not have been admitted under FRE 803(6), since the summaries were prepared in response to litigation rather than in the regular course of business. The lists also were not admissible as summaries under FRE 1006, because the government failed to provide defendants with a copy of the underlying documents prior to introduction of the summary. Finally, admission of the lists violated FRE 1002, which requires that the original of a writing be offered into evidence except as otherwise provided by the rules. Since the lists were not admissible under 803(6) or 1006, the best evidence rule applied and the government was obligated to furnish defendants with the original underlying records, i.e., the microfiche. However, admission of the lists was not prejudicial, since the subscriber information contained in the summaries was admitted through the computer telephone bills. The error in admitting the lists was harmless.

G. *United States v. Young Brothers, Inc.*, 728 F.2d 682 (5th Cir.), *cert. denied, Young Brothers, Inc. v. United States,* 469 U.S. 881, 105 S. Ct. 246, 83 L.Ed. 2d 184 (1984).

1. Holding: Admissibility of computer records under the business records exception to the hearsay rule does not require proof regarding accuracy of the underlying software; the witness laying the foundation need not have prepared the records, nor must the witness personally attest to the information's accuracy.

2. Laws involved: business records exception to the hearsay rule; Sherman Act (15 U.S.C. §1); mail fraud (18 U.S.C. §1341).

3. Facts: Young Brothers, Inc. (Young), was convicted of violating the Sherman Act by conspiring to submit collusive, non-competitive rigged contract bids for a state highway construction project and of violating 18 U.S.C. § 1341 by using the mails to defraud in furtherance of the conspiracy. Young agreed with another company, Gold Paving, to bid for a highway construction job and subcontract the work to Gold. Young submitted to bid for considerably more than Gold's estimate. Young had rigged the bid; the bid Young submitted was a "complimentary bid" designed to deceive state officials into believing that the project had been bid competitively. Young had arranged this with the company, Brannon Contractors, that actually won the bid. The two companies agreed that after Brannon was awarded the job, Young would send Brannon a bill for "rental equipment" and that the bill would be for ten thousand plus "some odd dollars." Young did in fact bill Brannon for $10,001; this bill was paid, but no equipment was ever actually rented. Several other companies had separately agreed with Brannon to bid higher than Brannon.

   Computer records at issue were documents used to prove the conspiracy affected interstate commerce and to prove the actual amounts of the bids for the job.

4. Analysis: The court rejected Young's assertion that computer records are less reliable than other kinds of business records because they depend upon the accuracy of the software as well as the person feeding the raw data into the computer. The court observed that this would require the government to produce the

software programmer to overcome this "double hearsay" problem. The court noted that earlier Fifth Circuit cases had established that computer data compilations may be business records and may be admissible as an exception to the hearsay rule, citing *United States v. Vela, infra* Section IV.H, and other cases. As with other business records, admissibility of computer records does not require that the witness laying the foundation have prepared the records or personally attest to the information's accuracy. In this case, the records were maintained by the state in the course of regular business activities. The witness testifying was the state official responsible for custody of the documents, and he testified as to the authenticity of the records.

H. *United States v. Vela,* 673 F. 2d 86 (5th Cir. 1982), *rehearing denied,* 677 F. 2d 113.

1. Holding: Computerized telephone records may be entered into evidence under the business records exception to the hearsay rule as long as proper foundation is laid. Testimony that the computers involved in the billing process were in proper working order is not required to establish a proper foundation; the telephone company's long-distance billing records are "sufficiently trustworthy . . . to be relied on by the company in conducting its day to day business affairs."

2. Facts and laws involved: Vela was convicted of a number of narcotics violations under 21 U.S.C. §§841 and 846.

3. Analysis re foundation: argued that the district court erred in admitting copies of his telephone bills and those of others under the business records exception to the hearsay rule, because a proper foundation was not laid to support the reliability of Southwestern Bell Company's computer-billing process. 's primary argument seems to be that testimony did not establish that the computers were in proper working order and thus a satisfactory foundation was not made. The court holds that the foundation was adequate to support admissibility under Federal Rule Evid. 803(6).

A Southwestern Bell employee described as custodian of the records testified that copies were made from microfiche records prepared by the company's comptroller's department; that the

records were prepared in the usual course of the company's regular business activity; and that it was part of that activity to prepare such records. The employee explained the process by which automatic call identification equipment registers long-distance telephone calls on electronic tapes. The tapes are transmitted to the comptroller's office where the information is transferred onto billing tapes. Computers record the initial dialing and compute and prepare bills. The employee vouched for the general reliability of the process, but was unable to identify the brand, type, and model of the computers and could not vouch for the working condition of specific equipment during the billing periods at question.

4. Additional comments: Review of a trial court's decision to admit business records is limited. This court has previously held that "computer data compilations . . . should be treated as any other record of regularly conducted activity." The telephone company's billing records are "sufficiently trustworthy in the eyes of this disinterested company to be relied on by the company in conducting its day to day business affairs." A telephone company employee explained the manner in which billing data are compiled. Failure to certify the brand or operating condition of computers "does not betray a circumstance of preparation indicating any lack of trustworthiness." The court has previously stated that computer evidence is not intrinsically unreliable. "'s arguments for a level of authentication greater than that regularly practiced by the company in its own business activities go beyond the rule and its reasonable purpose to admit truthful evidence."

I. *United States v. Jones*, 554 F. 2d 251, 2 Fed. R. Evid. Serv. 328 (5th Cir.), *cert. denied, Jones v. Unites States*, 434 U.S. 866, 98 S. Ct. 202, 54 L.Ed. 2d 142 (1977).

1. Holding: The introduction into evidence under the business records exception to the hearsay rule, of five IBM cards compiled in connection with defendant's use of fictitious credit card numbers, was valid. To lay a proper foundation for admission of evidence under the business records exception to hearsay rule, it was not essential that the witness be the recorder or even be certain of who recorded the items.

2. Law involved: Wire fraud statute, 18 U.S.C. §1343. "Whoever, having devised or intending to devise any scheme or artifice to defraud, or for obtaining money or property by means of false or fraudulent pretenses, representations, or promises, transmits or causes to be transmitted by means of wire, radio, or television communication in interstate or foreign commerce, any writings, signs, signals, pictures, or sounds for the purpose of executing such scheme or artifice, shall be fined not more than $1,000 or imprisoned not more than five years, or both."

3. Facts: Defendant was convicted of using fictitious credit card numbers in connection with long distance calls in violation of 18 U.S.C. §1343. He gave out credit card numbers to people and told them to use the credit card numbers to call him. The government introduced into evidence five IBM cards under the business records exception.

4. Analysis re foundation: Defendant argued that no proper foundation was laid by a "qualified" witness. The court concluded otherwise. The IBM cards were compiled by officials at Southern Bell Telephone & Telegraph Company and were kept in the regular course of business. "It is not essential that the offering witness be the recorder or even be certain of who recorded the item. It is sufficient that the witness be able to identify the record as authentic and specify that it was made and preserved in the regular course of business." Several telephone company employees, including the custodian of the records, identified the IBM cards. The trial court has wide discretion in determining whether the document has the inherent probability of trustworthiness.

J. *United States v. Scholle,* 553 F. 2d 1109, 1 Fed. R. Evid. Serv. 1374 (8th Cir.), *cert. denied,* 434 U.S. 940, 98 S. Ct. 432 (1977).

1. Holding: Printouts from a computer retrieval system of evidence related to confiscated drugs were admissible within court's discretion.

2. Law involved: Federal Business Records Act, 28 U.S.C. §1732; federal narcotics laws: conspiring to import cocaine, conspiring to distribute cocaine, distribution of cocaine, 18 U.S.C. §2, 21 U.S.C. §§841(a)(1), 846, 952(a).

3. Facts: Defendant Thuftedal made two trips to Bogota, Colombia, to obtain cocaine. Prior to the first trip, he invited Scholle, a lawyer, to invest in the venture. Scholle declined because Thuftedal had never repaid him money borrowed during a previous drug deal. Upon Thuftedal's return and his resale of the cocaine purchased in Colombia, he repaid Scholle and informed him of plans for a second trip to Bogota. Scholle provided Thuftedal with money on the eve of Thuftedal's second buying trip to Colombia. Scholle received one ounce of cocaine for his investment.

4. Argument: Scholle protested the introduction into evidence of computer printouts categorizing confiscated drugs by date and chemical components. By showing the dates when benzocaine had appeared as an adulterant, the government sought to establish the inference that the cocaine which one of the defendants was selling at the distribution end of the conspiracy was the same cocaine Thuftedal had acquired at the importation end of the conspiracy, thus evidencing the chain of conspiracy in which Scholle had been implicated by independent evidence. Scholle argued the computer printout and the accompanying witness testimony was irrelevant, without foundation, and prejudicial.

5. Analysis re relevancy: The determination of relevancy concerning computer evidence is within the broad discretion of the trial judge. The court's acceptance of the evidence was appropriate under Federal Rules of Evidence. 401, since the computer printout may have had a tendency to make the existence of a cocaine conspiracy involving the defendants more probable.

6. Analysis re foundation: This court has recognized the propriety of treating routinely made and recorded laboratory analyses of drugs as business records admissible under the Federal Business Records Act. The record must have been made in the regular course of business contemporaneously or within a reasonable time thereafter the events in questions. Although the Act did not mention computer printouts, Federal Rule of Evid. 803(6) specifically includes "data compilation." Computer printouts are not intrinsically unreliable and their use in criminal prosecutions has been upheld. However (citing to *United States v. Russo, infra* Section IV.K):

"Even where the procedure and motive for keeping business records provide a check on their trustworthiness . . . the complex nature of computer storage calls for a more comprehensive foundation. Assuming properly functioning equipment is used, there must be not only a showing that the requirements of the Business Records Act have been satisfied, but in addition the original source of the computer program must be delineated, and the procedures for input control including tests used to assure accuracy and reliability must be presented."

In this case, the witness was the founder of the computer retrieval system and was qualified by training, experience, and position to testify about the system. He adequately established that the disputed printouts reflected drug analyses computerized routinely during the regular course of business at the Drug Enforcement Administration, and described in detail the source of the information upon which the printout was based. Although the government presented little evidence concerning the mechanics of how input from eight widely dispersed laboratories is controlled or tested for its accuracy and reliability, and thus the foundation could have been "more firm," the court concludes that it cannot say the trial court erred.

7. **Note:** Recent cases indicate that the *Scholle* court's statements calling for a "more comprehensive foundation" for computerized business records may not be as definitive as it might have been when first decided. The court in *State v. Christensen, supra* Section III.A., for example, states that "the Scholle decision suffers from declining persuasiveness due to its antiquated pronouncements on an issue dealing with a rapidly developing technology." However, see *Lombardi Enterprises, Inc. v. City of Waterbury, infra* Section III.E, which appears to agree with *Scholle.*

K. *United States v. Russo,* 480 F. 2d 1228 (6th Cir. 1973), *cert. denied, Russo v. United States*, 414 U.S. 1157, 94 S. Ct. 915, 39 L.Ed. 2d 109 (1974).

1. Holding: A computer printout containing information about the procedures a particular doctor performed on patients is sufficiently trustworthy to be admissible under the business records exception to the hearsay rule.

2. Laws involved: Federal Business Records Act, 28 U.S.C. §1732(a) (business records exception to hearsay rule); mail fraud, 18 U.S.C. §1341.

3. Facts: Defendant, a physician, was convicted of an attempt to defraud Blue Shield of Michigan by filing claims for services not performed and for obtaining money from the insurance company with false representations. Specifically, defendant submitted insurance reimbursement forms to Blue Shield indicating that reimbursable procedures had been performed for patients when in fact no such procedures had been done. The forms indicated a high number of particular kinds of treatments.

   The computer records at issue in the case were gathered by Blue Cross as part of its verification process. The company would take the hard copies of submitted forms and stored the information from the forms on magnetic tape. The form itself would be microfilmed before the original hard copy would be destroyed. Checks are written every two weeks based on information in the magnetic tapes. Since 1967, Blue Cross has conducted an annual statistical survey showing the number of claims paid for compensable procedures covered by the company. The company also compiles, as part of its business, annual records showing which procedures have been reported by individual physicians.

4. Analysis

   a. **Is a computer printout a "record"?:** Defendant argued that the Blue Cross statistical run does not qualify as a business record under the federal Business Records Act because it is not a "record of any act or transaction." It was undisputed that the statistical run was a regularly maintained business record made in the ordinary course of business and that it was relied upon by the company in its business. The court concludes that although the Business Records Act does not mention computer records and printouts, "once the reliability and trustworthiness of the information put into the computer has been established, the computer printouts should be received as evidence of the transactions covered by the input." In this case, "[n]o evidence was introduced which put in question the mechanical or electronic

capabilities of the equipment and the reliability of its output was verified. The procedures for testing the accuracy and reliability of the information fed into the computer were detailed at great length by the witnesses."

b. **Is the record contemporaneous?:** Defendant argued that the computer printout should not have been received in evidence because it was not prepared at the time the acts which it claims to describe were performed or within a reasonable time afterwards as required by the statute. The court concludes that a record of payment was made at the time each form was paid by Blue Shield and that this record was referred to as the paid claims file.

"Since the computer printout is just a presentation in structured and comprehensible form of a mass of individual items, it is immaterial that the printout itself was not prepared until 11 months after the close of the year 1967. It would restrict the admissibility of computerized records too severely to hold that the computer product, as well as the input upon which it is based, must be produced at or within a reasonable time after each act or transaction to which it relates."

c. **Was the statistical record an inadmissible "summary"?:** The court distinguishes a case cited by defendant which involved an IRS exhibit prepared for trial in an income tax case. The IRS exhibit had not been prepared in the ordinary course of business and "was merely a recapitulation of certain information which had not been introduced to verify it in the case." The Blue Cross statistical run in this case contains a record of every claim paid during the year. The information is "arranged in a predetermined manner and classified according to medical procedures." The court notes one can distinguish the entire printout of the annual statistical run from a separate item consisting of a summary of portions of the printout.

d. **Was there sufficient foundation?:** The foundation for admission of computerized records "consists of showing the input procedures used, the tests for accuracy and reliability

and the fact that an established business relies on the computerized records in the ordinary course of carrying on its activities. The defendant then has the opportunity to cross-examine concerning company practices with respect to the input and as to the accuracy of the computer as a memory bank and retriever of information." The trustworthiness of the records needs to be determined before the records are admitted and the burden of presenting the foundation is on the party seeking to introduce the evidence.

e. **Was defendant provided ample opportunity to prepare defense to computerized records?:** If the government uses sophisticated scientific evidence, it must allow defendant time to make similar tests. *See* the Manual for Complex and Multidistrict Litigation. The court holds that defendant had ample notice of the nature of the evidence and chose to attempt to discredit the evidence by cross-examination rather by through discovery and the use of his own expert witnesses.

5. General statement on business records exception: "The Federal Business Records Act was adopted for the purpose of facilitating the admission of records into evidence where experience has shown them to be trustworthy. It should be liberally construed to avoid the difficulties of an archaic practice which formerly required every written document to be authenticated by the person who prepared it. . . . The Act should never be interpreted so strictly as to deprive the courts of the realities of business and professional practices."

L. *United States v. De Georgia,* 420 F. 2d 889 (9th Cir. 1969).

1. Holding: Testimony that an auto rental company's computer showed no transaction involving an allegedly stolen automobile was admissible under the Federal Business Records Act to corroborate defendant's confession of auto theft.

2. Law involved: Federal Business Records Act, 28 U.S.C. §1732; Dyer Act, 18 U.S.C. §2312.

3. Facts: Defendant was convicted under the Dyer Act for theft of a 1968 Mustang automobile stolen from Hertz in New York City and thereafter driven to Tucson, Arizona. Defendant argues that the evidence is insufficient to establish that the Mustang was a stolen vehicle at the time it was transported across state lines, an essential element of a Dyer Act offense. Defendant claimed he had borrowed the car from a friend who told him he had leased the vehicle. Defendant's confession was entered into evidence, and the appellate court upheld the admissibility of the confession. The computer evidence at issue consisted of information the Hertz security manager obtained from the Hertz master computer control in his office indicating that the vehicle had not been rented or leased at the time. Hertz does not keep a written business record of its rental and lease transactions, but maintains the information in the computer. Information concerning rental and lease agreements may be retrieved at the master computer control. When the witness received information from a Hertz office in Nebraska indicating the car might have been stolen, he checked the computer which showed no rental or lease was in effect on the car at this time.

4. Analysis: Defendant argued the computer evidence was hearsay because it amounted to an assertion by those who placed rental and lease information into the Hertz computer system (and who were not called as witnesses) that no such transaction involving the Mustang occurred after a certain date. Although this was "negative testimony," based on what a business record does not show, it can still be admissible. Moreover, it makes no sense to bring into court all documents relevant to prove that there was no record and to call as witnesses all company personnel who might have had the duty of entering transactions of this kind. Using the computer avoids these difficulties.

5. Concurring opinion: The concurring judge would have been concerned by an argument based on the best evidence rule, because the computer print-out sheets could have been made available as evidence that there no transaction had been recorded. The judge also expressed some concern about watering down the requirement that records have a high degree of trustworthiness:

"The problems concerned with mere summaries of records are likely to increase as electronic data processing equipment increasingly becomes a more normal means of keeping records. Summaries, in the form of print-out sheets, of voluminous data stored in a computer may be a more desirable form of evidence than admission of all the separate documents that were transcribed into the computer. Moreover, when a party seeks to prove the negative, that mention of a transaction of a specified character cannot be found in the records, then a summary may necessarily suffice. But in order fully to protect the defendant in a criminal case from undue infringement of his right to confrontation of the witnesses, this type of evidence should still be strictly tested."

V. FALSE STATEMENT AND OTHER TYPES OF FRAUD CASES

A. *United States v. Riggs,* 739 F. Supp. 414 (N.D. Ill. 1990).

1. Holdings:

   a. **Wire fraud:** An allegation of federal wire fraud does not have to allege that a defendant had a fiduciary relationship with the party defrauded.

   b. **Transfer of property across state lines:** The electronic transfer of proprietary information from one computer to another across state lines can constitute a violation of the National Stolen Property Act.

2. Laws involved: wire fraud (18 U.S.C. §1343); National Stolen Property Act (18 U.S.C. §2314).

3. Facts: Defendants Riggs and Neidorf devised a scheme to steal a computer text file from the Bell South Telephone Company (Bell South). The file contained information regarding the procedures for installation, operation, and maintenance of 911 services. Bell South considered the file to contain valuable proprietary information. Riggs and Neidorf wanted to print the information in a computer newsletter published by Neidorf.

   Riggs was able to download the computer text file from his home computer in Georgia and concealed his unauthorized access by

using account codes of people with legitimate access. He stored the stolen text file on a computer bulletin board system located in Illinois to make the file available to Neidorf. Computer hackers used the bulletin board to exchange information that could be used for unauthorized intrusion into computer systems. Neidorf used a computer located at his school in Missouri to access the bulletin board and receive the Bell South text file from Riggs. Neidorf edited the text file to conceal the fact that it had been stolen from Bell South. Neidorf uploaded his revised version of the file back onto the bulletin board for Riggs' review. Neidorf then published the edited version of the 911 text file in his computer newsletter.

The defendants were indicted for wire fraud and for interstate transfer of stolen property. On various pretrial motions pertaining to defendant Neidorf, the court held, among other things, that the wire fraud count did not have to allege that Neidorf had a fiduciary relationship with the telephone company and the electronic transfer of proprietary information from one computer to another across state lines can be a violation of the stolen property statute.

4. Analysis of wire fraud: The court rejected Neidorf's assertion that the indictment stated only that he received and transferred a computer text file, not that he participated in a scheme to defraud. The indictment plainly charged that Neidorf and Riggs plotted to steal the 911 text file from Bell South and distribute it. The indictment also alleged that Riggs and Neidorf took action in furtherance of the fraud scheme. Riggs allegedly used fraudulent means to access the computer system and disguise his unauthorized entry; Neidorf allegedly furthered the scheme by editing from the file references that would reveal the file's source, transmitting the file back to the bulletin board, and publishing the file in the newsletter. Both Neidorf and Riggs allegedly used code names and other means to avoid detection.

The fact that the indictment failed to allege that Neidorf had a fiduciary relationship with Bell South is irrelevant; this requirement is only necessary where the wire fraud charge is based on deprivation of an intangible right. Confidential information such as that at issue here is "property" and can form the basis of a wire fraud charge under §1343.

5. Analysis of interstate transportation of stolen property: 18 U.S.C. §2314 provides:

> Whoever transports, transmits, or transfers in interstate or foreign commerce any goods, wares, merchandise, securities or money, of the value of $5000 or more, knowing the same to have been stolen, converted or taken by fraud ... [s]hall be fined not more than $10,000 or imprisoned not more than ten years, or both.

The issue was one of first impression: no court had considered whether the electronic transfer of confidential business information from one computer to another across state lines constituted a violation of §2314. The government argued that reading §2314 as covering Neidorf's conduct was a natural adaptation of the statute to modern society.

a. Neidorf's first argument was that all he allegedly caused to be transferred across state lines were "electronic impulses" and not "goods, wares, [or] merchandise." The court disagreed. Several courts had upheld §2314 charges based on wire transfers, rejecting arguments that only electronic impulses, not actual money, crossed state lines. Citing a Second Circuit case, *United States v. Gilboe,* 684 F.2d 235 (2d Cir. 1982), *cert. denied*, 459 U.S. 1201, 103 S. Ct. 1185, 75 L. Ed. 2d 432 (1983):

> Electronic signals in [the §2314] context are the means by which funds are transported. . . . The manner in which the funds were moved does not affect the ability to obtain tangible paper dollars or a bank check from the receiving account. If anything, the means of transfer here were essential to the fraudulent scheme.

> Through the use of his computer, Neidorf allegedly transferred proprietary business information. Like wire transfers of funds, the information in the file was accessible at Neidorf's computer in Missouri before he transferred it; the information was also accessible at the computer bulletin

board after Neidorf transferred it. The fact that the information crossed state lines via computer-generated electronic impulses does not matter. If the information had been on a floppy disk or printed out, Neidorf's transfer of the information across state lines would clearly constitute the transfer of "goods, wares, or merchandise" within the meaning of §2314. Simply because Neidorf stored the information inside computers instead of printing it out on paper makes no difference.

b. The court rejected an argument that a §2314 charge cannot survive when the "thing" transferred never takes tangible form. It is not clear that tangibility is a requirement of "goods, wares, or merchandise" under §2314. Congress enacted §2314 to extend the National Motor Vehicle Theft Act to cover stolen property over $5,000 that is knowingly transported across state lines. Reading a tangibility requirement into the definition of "goods, wares, or merchandise" might unduly restrict the scope of §2314, especially in this modern technological age. Even if tangibility is a requirement of "goods, wares or merchandise," the computer information in this case satisfies the requirement. Although not printed out on paper, the information was stored on computer. By pressing a few buttons, Neidorf could recall the information and view it on his computer.

c. The court rejected an argument that the "things" Neidorf allegedly transferred are not property capable of being "stolen, converted or taken by fraud" under §2314. The court distinguished confidential business information from copyrights, which several courts have held are not a type of possessory interest capable of being stolen or taken by fraud (although such rights can be infringed). The owner of confidential business information possesses something that has been recognized as property. It can be stolen, which is what allegedly happened to the information in Bell South's 911 text file.

B. *United States v. Bonallo*, 858 F. 2d 1427, 26 Fed. R. Evid. Serv. 1085 (9th Cir. 1988).

1. Holding: Evidence was sufficient to support convictions on bank fraud; also a computer printout referred to as a "fraud program," found by a bank employee after defendant Bonallo left employment, was relevant and admissible.

2. Law involved: 18 U.S.C. §1344 (bank fraud). Section 1344 provides:

   (a) Whoever knowingly executes, or attempts to execute, a scheme or artifice
   (1) to defraud a federally chartered or insured financial institution; or
   (2) to obtain any of the moneys, funds, credits, assets, securities or other property owned by or under the custody or control of a federally chartered or insured financial institution by means of false or fraudulent pretenses, representations, or promises, shall be fined no more than $10,000, or imprisoned not more than five years, or both.

3. Facts: Bonallo worked on computer software problem-solving for a bank subsidiary that handled data processing. His responsibilities included ATM machines. For purposes of analysis, the court assumed Bonallo was not a bank employee. Bonallo was convicted of manipulating ATM transaction records and withdrawing funds from customers' accounts. Evidence admitted included 1) testimony regarding Bonallo's "fraud program," which a witness stated was designed to provide access to the ATM computer files and to alter transaction records; 2) access logs indicating that Bonallo had entered building shortly after each fraudulent transaction; 3) in some cases, access logs indicating Bonallo had left the building immediately before a fraudulent transaction had occurred at the ATM machine right outside the building and then re-entered shortly thereafter; and 4) numerous deposits to Bonallo's savings account in case, frequently in $20 bills.

4. Sufficiency of evidence: Bonallo argued that he was framed. He conceded, however, that alteration of the computer records may be "the most likely method by which such transactions occurred." The record contained sufficient evidence to warrant the conclusion that

alteration of the company's computer records was the method by which the fraud was committed. Bonallo conceded that the frauds were most likely perpetrated by an company employee. Moreover, the "fraud program" entered into evidence was designed to penetrate and alter ATM files. Bonallo was the most expert computer analyst at the company, the fraud program was found in his program library, and he had access to the passwords needed to utilize the program.

5. Analysis re trustworthiness: Two government exhibits were lists 1) of persons whose bank card numbers were used to obtain funds from ATMs; and 2) reflecting the date and time of the ATM transactions and the times when the defendant arrived at and left the building after hours. The information in the exhibits came from computer logs and customer affidavits. Bonallo challenged the evidence under the business records exception. He contended that untrustworthiness lies in the fact that the government claimed as its central theory of the case that he altered the computer records. He noted that government witnesses testified that it was possible to alter the transaction records as well as the access logs (therefore, by definition, they are untrustworthy).

   After noting that computer records are properly admissible as business records under FRE 803(6), the court rejects this argument. If the government had wished to introduce ordinary records, made in the normal course of business, in their original form, proof that the records had been altered would tend to show that they were unreliable. But in this case the government introduced what it contended to be altered records precisely to show that they were altered. Thus, the government's allegation that the defendant altered the records is consistent with the purpose for which the records were introduced.

   Bonallo also argued that the records are untrustworthy because it is possible that someone else altered them in an effort to frame him. The court concluded that Bonallo did not provide any evidence to support this theory. "The fact that it is possible to alter data contained in a computer is plainly insufficient to establish untrustworthiness. The mere possibility that the logs may have been altered goes only to the weight of the evidence not its admissibility."

6. Admissibility of fraud program: The "fraud program" was a computer printout in computer language. It was found by the person who replaced Bonallo after he was fired, in Bonallo's computer program listings. The "fraud program" could alter ATM transaction records to make it appear that a cash withdrawal from an ATM was made by one cardholder when it was in fact made by another. Bonallo argued that the exhibit was irrelevant because the employee who found the program ran it after he modified the computer programs and files. He also ran the program on "test" files rather than actual files. Finally, Bonallo argued, the government failed to establish that the program submitted was the one Bonallo used to alter the records. The court rejected these arguments, holding that the district court did not abuse its discretion in admitting it because "the discovery of the program in Bonallo's program library likely had a "tendency to make the existence of [a] fact that is of consequence to the determination of the action more probable . . . than it would be without the evidence," Fed. R. Evid. 401."

C. *United States v. London*, 714 F. 2d 1558 (11th Cir. 1983).

1. Holding: The term "forge" in a statute prohibiting forgery of the signature of a judge, registrar, or other officer of the court includes using a photocopied signature of a judge and deputy clerk to authenticate a false order for fraudulent purposes. Forgery includes photocopying genuine signatures of judges and officers of the U.S. courts when the photocopied signatures are used to authenticate false documents for fraudulent purposes: "A false writing can be made by any number of artificial means and still fall within the ambit of common law forgery."

2. Law involved: 18 U.S.C. §1001 (using a falsely made document within the jurisdiction of an agency of the United States); 18 U.S.C. §505 (forging and concurring in the use of a forged document); and 18 U.S.C. §1503 (endeavoring to obstruct justice).

3. Facts: London, a lawyer, represented clients who were being sued on a contract for installation of steam units which had been installed in a motel prior to its acquisition by the clients. The district court indicated at a pretrial conference that a summary judgment would be granted in favor of London's clients. After the

pretrial conference, London met with two of his clients and presented them with a copy of a purported order which he said the judge would be signing and which would require the clients to pay the plaintiff approximately $54,000 unless it was permitted to remove the steam units. In the latter event, the amount to be paid would be $34,000.

London make the same false representations a few days later, after the summary judgment had been issued by the judge absolving London's clients of all liability. London presented a copy of a purported order, carrying the claimed signature of the judge, requiring the clients to pay the sum of $27,000. The order had been put together by substituting a fake second page for the original true second page.

Later the same day, the clients found out that the district court had absolved them of all liability. The lawyer for a third party, who had told the London clients the facts, notified the judge, who alerted the FBI. London was invited to another meeting where the FBI videotaped the meeting. London continued to represent the bogus order as the genuine order of the court. He accepted a check for $27,000, made out to him individually, on the representation that it would be held in escrow to pay the judgment. At that point he was promptly arrested.

4. Analysis: London argued that no forgery was committed under 18 U.S.C. §505, because the signatures on the false orders were photocopies of the true signatures. The court holds that forgery includes photocopying genuine signatures of judges and officers of the U.S. courts when the photocopied signatures are used to authenticate false documents for fraudulent purposes. The court cites to *Benson v. McMahon, infra* Section V.D, for the general premise that:

"Fundamentally, there is no distinction between the activities of the appellant in the instant case and those of the appellant in Benson. The fact that the appellant was able to employ modern means in reproducing the signatures directly from copies of originals offers no material distinction between the two cases. Whether it be photocopy machines in 1983 or impression plates in 1888, the technology is unimportant. The bottom line is that, in both cases,

false writings of the names of others were used in an attempt to defraud."

D. *Benson v. McMahon*, 127 U.S. 457, 8 S. Ct. 1240, 32 L. Ed. 234 (1888).

1. Holding: False theater tickets issued with intent to defraud persons of money constitute forgery despite absence of a signature.

2. Law involved: Extradition treaty with Mexico which includes forgery as a crime for which extradition may be sought.

3. Facts: This case is included in this list because it is cited by some of the recent electronic cases in the context of what is necessary to prove a forgery. Benson represented himself as the agent of a well-known singer, made arrangements allegedly on her behalf with a theater in Mexico City, issued tickets for her performance, and absconded with the proceeds. The allegedly forgery is the tickets; Mexico sought extradition.

4. Benson's argument: The tickets were not forgeries because they were not "printed matter, and were not in writing." They were not "in writing," according to Benson, because the names or signatures of responsible parties do not appear anywhere on the tickets.

5. Analysis: "[W]e are not satisfied that the crime of forgery, even at common law, is limited to the production by means of a pen of the resemblance of some man's genuine signature which was produced with a pen. This view of the subject would exclude from the definition of this crime all such instruments as government bonds, bank-notes, and other obligations of great value, as well as railroad tickets, where the signature of the officer which makes them binding and effectual is impressed upon them by means of a plate or other device representing his genuine signature. It would also exclude from its definition all such instruments charged as forgeries where the similitude of the signer's name is produced by a plate used by the forger. It can hardly be possible that these are not forgeries within the definition of the common law; and if they are, they show that it is not necessary that the name which appears upon the false instrument shall be placed thereon by means of a pen or by the actual writing of it in script, but that the crime may be committed as effectually if it is done by an engraved plate or type

so arranged as to represent or forge the name as made by the actual use of a pen."

6. Bishop on criminal law (cited by the Supreme Court): "Looking at the writing as a representation addressed to the eye, reason teaches us that, whether it is made with the pen, with a brush, with printers' type and ink, with any other instrument, or by any other device whatever; whether it is in characters which stand for words or in characters which stand for ideas, in the English language, or in any other language, -- is quite immaterial, provided the representation conveys to any mind the substance of what the law requires to constitute the writing whereof forgery may be committed."

7. The Court referred to the changing nature of the times:

   a. "The great increase in the use of printing for all forms of instruments, such as deeds, bonds, tickets, tokens for the payment of goods, etc., have seemed to demand that where, either by the common law or by statute, such instruments are required to be in writing, the term 'writing' should be held to include printing as well as script."

   b. Discussing and quoting another case holding that a printed legislative voting ballot came within the meaning of a law requiring votes to be in writing: "The cases of forgery generally are cases of forged handwriting. The course of business, and the necessities of greater facilities for dispatch, have introduced, to some extent, the practice of having contracts and other instruments wholly printed or engraved, even including the name of the party to be bound. . . . It has never been considered any objection to contracts required by the statute of frauds to be in writing that they were printed. . . . But if an individual or a corporation do in fact elect to put into circulation contracts or bonds in which the names of the contracting parties are printed or lithographed, as a substitute for being written with the pen, and so intended, the signatures are to all intents and purposes the same as if written. It may be more difficult to establish the fact of their signatures; but if shown, the effect is the same. Such being the effect of such form of executing like contracts, it would

seem to follow that any counterfeit of it, in the similitude of it, would be making a false writing purporting to be that of another, with the intent to defraud."

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