ORIGINAL

IN THE SUPREME COURT OF OHIO

Original action in mandamus; case no. 2010-2029

STATE ex rel. DATA TRACE INFORMATION SERVICES, LLC, et al.,

Relators,

-v-

RECORDER OF CUYAHOGA COUNTY, OHIO,

Respondent.

Relators' Volume 3 of Evidence: affidavits of Michael Stutzman, Charles Hayden, Greg Kelley, Jason Gerbec, Brenda Martinez, Prof. Peter Shulman & related exhibits

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State of Ohio)
) SS: Affidavit of Michael Stutzman
Cuyahoga County)

I, Michael Stutzman, being sworn, state the following based on my personal knowledge:

Background

1. I am one of the relators in the suit, Ohio Supreme Court Case No. 10-2029. One of the other relators, Data Trace Information Services, LLC, employs me as its operations manager.

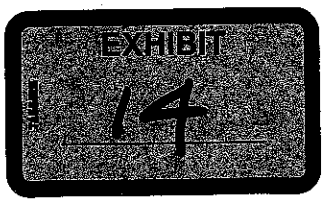
2. The headings in this affidavit are for the reader's convenience to show where this affidavit addresses particular topics.

3. Data Trace is a subsidiary of First American Title Insurance Company. First American Title Insurance Company is one of the nation's largest insurers of title to land. First American has offices in Ohio.

4. During the 1800s, the firm that is now Data Trace opened an office in Cleveland, Ohio, to service firms that evaluate title to real estate.

5. I joined Data Trace in 1987, and became manager of Data Trace's Cleveland office in 1998.

6. Data Trace stores and organizes information gleaned from deeds, mortgages, privately-held liens on land, tax liens on land, releases of mortgages and liens, leases, and other publicly available records that county recorder's offices record.



7. Data Trace also stores and organizes digital images of those same recorded instruments.

8. Data Trace does *not* sell information to any company for that company's use in advertising, promotion, or marketing to consumers or to businesses. Data Trace does *not* sell digital images of recorded instruments to anyone in bulk.

9. Data Trace's clients are companies that evaluate and insure the quality of title to land regardless of whether the land has been used for residential, commercial, or governmental purposes.

The county began in 1999 to store and index recorded instruments via computer system

10. From 1997 until mid-2008, Patrick O'Malley was the Cuyahoga County Recorder. I conversed with Mr. O'Malley and other managers of the recorder's office regularly, and observed that Mr. O'Malley caused the county recorder's office to change from a paper-based system of managing recorded instruments to a computer-based system.

11. By 1999, the county recorded deeds and other instruments by electronically scanning the originals to create digital images of them, and returned the original instruments to the person who had presented them. The county stored those digital images in its computer system.

12. I eventually learned through county personnel that the county made back-up copies of those digital images on optical compact disks — CDs. The county referred to those back-up copies as "master CDs."

The county would copy a "master" CD onto a blank CD for $50

13. For about 11 years, beginning in late May, 1999, the county recorder's office duplicated the contents of its master CDs onto blank compact disks. It provided those dubbed CDs for $50 apiece. Each CD was to contain digital images of all of the deeds, liens, mortgages, and other instruments that the county recorded on a single day.

14. Throughout those 11 years, Data Trace regularly acquired a copy on CD of one of the county's master CDs. Data Trace regularly paid the $50 fee for each copy.

15. The county did not certify the CD copies that Data Trace obtained, nor did the CD copies have digital images of certified copies of recorded instruments.

The crux of how the county uses its computer system to record such instruments as deeds

16. To understand how Data Trace has used the CD copies of the county's master CDs, the reader of this affidavit should first understand the basics of what the Cuyahoga County recorder's office does.

17. By working directly with the county recorder's office and relying on and using what I learned from county personnel, I have learned generally how the county records instruments such as deeds.

18. Deeds, mortgages, and other legal instruments that affect interests in land come to the county recorder's office as paper documents. Using a deed as an example, the county takes the original deed and scans it electronically to create a digital image of the deed.

19. The recorder keeps the digital image of the deed as a computer file.

20. The recorder assigns a unique number to that deed, called an AFN, which stands for Automated File Number. That number shows the date that the county recorded the deed and the sequence in which it was recorded that day.

21. For example, if the deed was the 1,152nd instrument that the county recorded on June 12, 2002, the AFN would be 200206121152. "2002" is the year; "06" is the month of June; "12" is the date of that month; and "1152" signifies that the deed was the 1,152nd instrument that the county recorded that day.

22. The recorder also collects a fee for recording the deed.

To aid the reader in understanding how Data Trace uses digital images of deeds and other recorded instruments, this affidavit first summarizes the county's index of those records. The crux of how the county indexes deeds & other recorded instruments

23. Continuing with the deed example: Using information that appears on the face of the digital image of the deed, employees in the county recorder's office enter information into the computer system. The information that they enter is governed by certain fields.

Among those fields:

(a) the deed's AFN;

(b) the date the county recorded the deed;

(c) the kind of instrument that the deed is, by abbreviation; a quitclaim deed, for example, is DEQC;

(d) the permanent parcel number that the county auditor has assigned for property-tax purposes to the portion of land that the deed covers;

(e) the AFN of a previously recorded instrument that the newly recorded deed references. For example, a newly recorded release of a mortgage might recite the AFN of the mortgage being released.

(f) The name of the person – last and first – conveying title to the land, *i.e.*, the grantor.

(g) The name of the person – last and first – acquiring title to the land, *i.e.*, the grantee.

24. Using the fields of information derived from the deed, the search tools of the county's computer systems allow anyone to search for recorded instruments by typing in specific information on the county recorder's website, or by typing in specific information at a computer terminal inside the recorder's office.

25. I have conducted searches using the county's computer systems both inside the recorder's office and via the county's website, and am familiar with its search capabilities.

26. The search tools on the website have some limitations that don't exist when using the county's inside terminals. One of those limitations is that the website won't allow you to see the actual content of an instrument that exceeds a certain number of pages. What I describe here is use of the

terminals inside the county's offices, which do allow you to see the content of an instrument, regardless of how many pages it is.

27. An example of conducting a search on the county's computer system:

Suppose that John McIntosh has asked Cleveland Bank for a mortgage loan of $300,000 to buy a warehouse from Trudy Stack. Before lending the money, the bank will want to know that Trudy holds merchantable title to that real estate.

28. Merchantable title means that the quality of Trudy's title must be free enough of defects or risks to meet the ordinary demands of the real estate marketplace for buying land; her title doesn't have to be perfect.

29. If I were using the county's computer system to research the quality of Trudy's title, I would enter her name in the county's computer system as a grantee. That search should show when Trudy acquired her title, from whom, and whether she acquired it through a quitclaim deed, a general warranty deed, or some other means of conveying title to the property.

30. If Trudy used the land to secure a mortgage loan to buy the property, the county's computer system should show that, too. And it should show the name of the lender, and whether the lender released her from the mortgage.

31. Suppose that Trudy had conveyed the same property three years earlier to someone else, perhaps mistakenly as part of conveying some subdivisions of a larger lot in a densely built-up area of Cleveland. Suppose that the buyer recorded the deed. My search of Trudy's name in the grant*ee* field may not reveal that conveyance. But if I also search her name in the grant*or* field, I should see that she no longer has title to the property, and therefore the bank shouldn't loan money to John McIntosh to buy it.

Limits to the county's electronic indexing

32. One of the problems with searching by the name of the grantor or grantee is that it might not reveal some significant encumbrances on title to the property.

33. For example, suppose that Trudy Stack had leased her warehouse to Bounce Properties, and no one recorded that lease with the county recorder.

34. Suppose also that Bounce Properties hired a contractor – Sally's Interiors – to remodel the inside to make it a nightclub, agreeing to pay $100,000 for those services.

35. Now suppose that Sally's Interiors recorded a mechanic's lien with the county recorder to secure payment of the $100,000 that Bounce Properties would owe for the remodeling.

36. The recorded mechanic's lien probably won't be linked in the county's computer system to Trudy's name. It probably would be linked only to Bounce Properties and to the name of the contractor. So searching Trudy's name in the grantor or grantee index probably won't reveal the mechanic's lien that burdens Trudy's property.

37. The county recorder also has a separate index that covers mechanic's liens, but that may not reveal the lien by Sally's Interiors if I search that index for Trudy Stack's name. That's because the instrument evidencing Sally's Interiors' lien may name only Sally's Interiors and the tenant, Bounce Properties.

38. If I know the permanent parcel number of Trudy's land, I could use the county's electronic grantor-grantee index to search by permanent parcel number.

39. But if earlier recorded instruments affecting title to that parcel of land – such as Sally's Interiors' mechanics lien – did not recite the permanent parcel number of that land, the county employees would not know to link those earlier recorded instruments to the permanent parcel number for Trudy's land.

40. The county employees do not research beyond the face of the instrument itself to determine the permanent parcel number associated with a recorded instrument. So using the county's index to search by permanent parcel number carries risk that I'd miss something important.

41. The county's electronic index does not search by street address.

42. When county employees type information into computer fields, they inevitably make mistakes. Misspelling a name and typing an incorrect digit for a permanent parcel number are common mistakes that can have a huge adverse impact on searching the chain of title, quality of title, and for encumbrances. If county employees type Trudy Stack's last name into the computer system as "Stak" when indexing the mortgage on her property, I probably wouldn't find her mortgage by searching for Trudy "Stack."

43. Even when county employees enter a name exactly as shown on a deed, that doesn't guarantee against mistakes. For example, Trudy's deed may spell her name as "Trudy" Stack. But her mortgage may spell her name as "Gertrude" Stack. Even if county employees input the mortgage information accurately – "Trudy Stack" – searching the county's index for "Trudy" Stack will reveal her deed, but may not reveal the mortgage.

44. A similar problem may arise when search the grantee or grantor name for a company or an entity because of the abbreviations that the county uses. For example, if the grantee is the City of Cleveland, the recorder's office sometimes abbreviates that as "Cleve., City of." If you search for "Cleveland" or even "City of Cleveland," you may not find it.

How Data Trace used CD copies of one of the county's "master" CDs

45. When Data Trace had a CD copy of one of the county recorder's "master" CDs, Data Trace personnel uploaded the copies of the digital images of recorded instruments on the CD to one of Data Trace's computer servers.

46. Data Trace had from 7 to 10 people devoted to handling information from instruments recorded in Cuyahoga County.

47. Copies of the digital images of the recorded instruments from the CD were distributed to each of those people through their computer terminals.

48. Using the digital image from the CD of, for example, a deed, a data-entry person typed information gleaned from the face of the deed into fields set up by Data Trace's data-entry software. Among those fields:

    (a) permanent parcel number that the county auditor assigned to the land;

    (b) the plat book and page number and sublot number that the county recorder assigned to the land;

    (c) names of the grantor and grantee;

    (d) amount of money for a mortgage or lien;

    (e) type of recorded instrument, *e.g,* quitclaim deed;

    (f) a reference number to link instruments that encumber, or release encumbrances upon, the same tract of land, such as linking an assignment of a mortgage to the original mortgage and to the eventual release of the assigned mortgage;

    (g) remarks for the data entry person to describe potentially useful information shown on the deed where none of the fields covers that information.

49. Independently of that person, a second data-entry person, using the second person's digital copy of the deed, typed information derived from the face of the deed into the same fields.

50. If the information entered by the second person didn't match exactly the information that the first person had typed in – such as the digits of a permanent parcel number or the spelling of a name – the data-entry software alerted them of the discrepancy.

51. The second person then had to resolve the discrepancy.

52. When there were no discrepancies, or after the data-entry personnel resolved discrepancies, the information was transmitted to Data Trace's main computer system.

53. The main computer system has more mechanisms to catch mistakes or inconsistencies.

54. Suppose, for example, that a prior recorded deed showed that a large tract of land had been subdivided into lots. Suppose that there were a total of 20 lots sequentially numbered. And suppose that a newly recorded deed referred to the larger tract, but the newly recorded deed recited that it conveyed lot 22.

55. When Data Trace's personnel enter into the computer system that the deed is for lot 22, the system would warn that the tract did not have 22 lots. That raises questions about the accuracy of the face of the deed. The Data Trace staff then would work to try to resolve the discrepancy.

56. As another example, suppose that a newly recorded instrument is the release of a mortgage. Data Trace's main computer system would search for the mortgage being released. If it couldn't find the mortgage, the computer would say so. Data Trace staff then would try to resolve the apparent absence of a recorded mortgage.

57. Staying with the example of a release of a mortgage, Data Trace's main computer system would note whether the earlier instrument to which the release is linked is, in fact, a mortgage. If that earlier instrument is something else, such as a tax lien, the computer system will issue an alert that the release of a mortgage has been mistakenly linked to the wrong document.

Speed: when time is of the essence

58. Suppose that you have contracted to buy a house for $310,000. You paid $60,000 of the purchase price, and you obtained the remaining $250,000 as a mortgage loan from a bank.

59. When the deal closes, you would transfer the $310,000 to the seller. But just before doing that, you would want to make sure that there are no new encumbrances on the property since you or the bank had last checked, or, maybe, that the seller hasn't conveyed a section of the property to someone else.

60. Data Trace's computer system is so fast and its search so comprehensive that you or your bank can have the tract of land and the grantor-grantee names checked an hour before closing to make sure that no one had saddled the property a few days before with newly-recorded liens or even newly recorded deeds conveying part of the same property to someone else.

61. Using only the county recorder's search mechanism to search the county recorder's data to accomplish that kind of last-hour search would be less timely and efficient.

How Data Trace gets paid & for what

62. Data Trace does not evaluate the quality of title to land; it provides access to its database and searching capabilities.

63. Suppose that, to buy a $310,000 house from Mary Webster, you have applied to Cleveland Bank for a mortgage loan for $250,000.

64. Cleveland Bank would retain a title company to evaluate the quality of Mary Webster's title to the property, and to issue title insurance according to the company's terms.

65. To evaluate Mary's title, the title company would place an order with Data Trace to gain access to Data Trace's data, indexing, and search capability.

66. The title company would perform the searches of Data Trace's information to evaluate the quality of title.

67. The title company would pay a fee to Data Trace for access to the data base and its search tools.

More value-added by Data Trace

68. After the county recorder's office began to manage its recorded instruments through a computer system, the recorder's office periodically told me that some of its recorded instruments were missing — either entire instruments or that some of the pages were missing.

69. Those missing instruments or pages of instruments had been recorded during the 1970s, 1960s, and 1950s, and included deeds, mortgages, Torrens certificates of title, and leases.

70. On those occasions, the county asked if Data Trace had copies of the missing records or pages. The county asked if Data Trace would provide duplicates to the county to replace what the county was missing.

71. Date Trace then provided the county with free duplicates of Data Trace's copies of the records that the county could not locate, except in the very rare instance where Data Trace didn't have a duplicate.

Receiving and paying for electronic copies of Cuyahoga County's grantor-grantee index

72. While Patrick O'Malley was the Cuyahoga County Recorder, the county provided digital copies of the grantor-grantee index that this affidavit described earlier.

73. Throughout a year, the county provided Data Trace with regularly updated copies of those in digital form for $5,000 each year.

74. In mid-September, 2009, I received a letter from O'Malley's successor in office, Recorder Lillian Greene. The letter increased the $5,000 fee for updated electronic copies of the index to $7,500. The reason: "the recent

county budget crisis has caused all agencies to re-evaluate their own budgets in an effort to maximize income and cut expenses."

75. A copy of the letter from Lillian Greene, dated September 16, 2009, is marked as **Exhibit 17**. In further communications with the recorder's office, I confirmed that the substance of the letter accurately conveyed the office's policy.

The county stops providing CD copies of its "master" CD

76. In the spring of 2010, the recorder's office notified me that it no longer would provide CD copies of the digital images from its "master" CD.

77. The recorder's office advised that it would provide only paper print-outs of those digital copies of recorded instruments and only at a fee of $2 per page.

78. One day's worth of paper printouts of deeds, mortgages, and other instruments could be over 5,000 pages. At so many pages, the county would demand a fee of some $10,000 for a stack of paper several feet high that was unmanageable and limited to only one day's worth of recorded instruments.

79. The recorder's chief of staff, John Kandah, expressed the policy's rationale this way: He said that, while recorder's personnel were having to take furlough days without pay due to the county's financial difficulties, Data Trace and the other companies were getting CDs of all of the recorded instruments without having the pay $2/page, and then using those CD copies to "get rich" – to generate revenue for themselves.

80. On October 5, 2010, I sent a letter to the Cuyahoga County Recorder asking for digital copies on CD of the instruments recorded in July and August, 2010. A copy of that letter is marked as **Exhibit 15**. The letter said that Data Trace remained willing to resume paying the $50 fee for each CD copy, even

though that amount was higher than what the Public Records Act would require. The letter also asked the recorder to change its policy so that it would provide CD copies "at cost."

The request upon which Data Trace and I have sued

81. During the next three weeks, the county recorder did not acknowledge to me that the recorder was considering my request – the recorder neither granted it nor denied it nor suggested that I'd receive a response of any kind at some future time.

82. Data Trace then sued the recorder in an original action in the Ohio Supreme Court, No. 10-1823.

83. The recorder's office did not acknowledge my October 5 request until November 16, six weeks after I made the request, and over two weeks after the recorder's office had received the summons in the lawsuit.

84. David Marburger provided me with a copy of the November 16 letter, which the county had addressed to him apparently in response to my October 5 request. It said: "I confirm the Cuyahoga County Recorder's prior responses that it will provide the requested materials upon payment of the statutory fees required under R.C. 317.32."

85. Because the November 16 letter referred to "prior responses" and because the county earlier had refused to provide CDs, the letter apparently said that the county would provide only paper printouts of the digital images of the instruments recorded in July and August, 2010, at $2/page, but would not provide CD copies of the "master" CD.

86. Press coverage of the county's view of the suit in mid-March, 2011, caused me to wonder whether the county recorder's office misunderstood what I'd

requested. It seemed as though the county thought that I'd asked to have copies of deeds and other instruments scanned to create CDs, or to have the county create a CD copy directly from computer files. To make it unmistakably clear that I wanted only dubs from the pre-existing "master" CD, I sent a follow-up letter to Mark Parks, the successor-in-office to Lillian Greene. Mr. Parks had succeeded Ms. Greene about a month earlier.

87. **Exhibit 16** is a copy of the follow-up letter that I sent to Mr. Parks in March, 2011.

88. I made the request of October 5, 2010, and the follow-up to it of March, 2011, to aid in performing my responsibilities as Data Trace's operations manager. So I made the request to aid Data Trace, as well as to assist my own performance. The county's refusal to provide CD copies of its master CD, or to condition providing those CD copies on receiving a fee of $208,000 for CD copies covering July and August, 2010, interferes with my ability to excel fully in performing my job responsibilities.

Registering to do business in Ohio

89. About a month after Data Trace sued the Cuyahoga County Recorder to enforce my request of October 5, 2010, the county asked the court to dismiss the suit. The county said that Data Trace had no right to sue because it had not registered to do business in Ohio, and so hadn't paid the $125 registration fee.

90. I knew that, under one name or another, Data Trace had done business in Cleveland since the 1800's, so registering to do business in Ohio never occurred to me. Plus, I understood that the parent company, First American Title Insurance Company, was registered to do business in Ohio.

91. Despite closely working with the county recorder's office for over 20 years, the county had never mentioned to me any issue about Data Trace not being registered to do business in Ohio.

92. Immediately upon learning that the county said in its court filing that Data Trace is supposed to register to do business in Ohio, I confirmed that Data Trace had not registered. Data Trace then registered and paid the $125 registration fee. I don't know whether the law actually required Data Trace to register.

93. Instead of wasting time and money arguing about whether Data Trace could continue with the suit, Data Trace filed a new suit, the current one, No. 10-2029, after registering and paying the $125 fee.

What if Data Trace paid the fee that Cuyahoga County now demands?

94. Cuyahoga County is demanding that Data Trace pay a fee of more than $208,500 to obtain CD copies of the county's master CDs covering only July and August, 2010.

95. If Data Trace were to pay that fee for those CD copies and to continue paying for other CD copies at that rate, Data Trace would raise dramatically the fee that it charges to title companies for accessing and searching Data Trace's database to evaluate title to land in Cuyahoga County.

96. The counties in Ohio from which Data Trace has assembled digital copies of recorded instruments has been Cuyahoga, Franklin, and Lorain.

_____

Michael Stutzman

Sworn to and subscribed before me in my presence this _____ day of May, 2011.

_____

Notary Public

Michael Stutzman

Sworn to and subscribed before me in my presence this 12 day of May, 2011.

Notary Public

ERIN R. BARKER-BROWN, Attorney
Notary Public, State of Ohio
My commission has no expiration date.
Section 147.03 O.R.C.

First American
Data Tree

Data Trace

October 5, 2010

VIA FEDERAL EXPRESS
Lillian J. Greene, Cuyahoga County Recorder
Cuyahoga County Recorder's Office
1219 Ontario Street
Cleveland, Ohio 44113

Re: Public Records Act Request

Dear Ms. Greene:

On behalf of First American Data Tree LLC ("Data Tree") and Data Trace Information Services LLC ("Data Trace"), I am writing to request, under the Ohio Open Records Act, R.C. 149.43, electronic copies of all documents publicly recorded in the Cuyahoga County Recorder's Office in the months of July and August 2010. I understand that these documents are currently maintained by your office in electronic form. Data Tree and Data Trace do not object to you not producing military discharges recorded during those two months.

Alternatively, if it would be less work for you to provide us with electronic copies of only the first 100 documents publicly recorded on each day of July and August, 2010, we are willing to accept electronic copies of only those documents in lieu of electronic copies of every document publicly recorded in July and August, 2010.

Under R.C. 149.43(B)(6), please provide copies in electronic form on a compact disc (CD). Please produce the electronic copies in a format that does not modify the original document, and without any type of watermark image.

Your office has a policy or practice of imposing a charge for all copies of recorded documents, whether imaged or paper, of $2.00 per page or image. This policy is contrary to Ohio law. Ohio Revised Code § 317.32(I) provides that only *photocopies*, i.e., *paper* copies of recorded documents, are subject to the $2.00 per page copy fee. Conversely, electronic images and other *nonpaper* copies of recorded documents are subject to the general "at cost" standard under R.C. 149.43(B)(1).

Before adopting its current non-conforming policy, your office had provided electronic copies each day. Your office provided them on CD for a copying charge of $50 per CD. Although that fee exceeds the maximum allowed under the Public Records Act, Data Tree and Data Trace are willing to resume paying it.

10-01988

EXHIBIT
15

If your office seeks to impose a higher fee, we will insist that your office charge no more than the actual cost to your office of producing the requested electronic images. Accordingly, please consider this letter a formal demand that your office immediately amend its public record fee policy and practice to comply with Ohio law.

Finally, if you deny any part of this request, under R.C. 149.43(B)(3), please provide me with a written explanation, including legal authority, justifying your denial.

Sincerely,

Michael Stutzman

Operations Manager

7340 Shadeland Station Suite #125

Indianapolis, Indiana 46256

Telephone (317) 863-2453 Cell (216) 780-4949

Fax (317) 598-8521

Email mstutzman@edatatrace.com

10-01988

Via overnite delivery service

Mr. Mark Parks
Acting Fiscal Officer
Department of the Recorder
Cuyahoga County
2d Floor
Cuyahoga County Administration Bldg.
1219 Ontario Street
Cleveland, Ohio 44113

Re: Potential misunderstanding about Public Records Act request of Oct. 5, 2010

Dear Mr. Parks:

This follows up on the request that I made for copies of recorded instruments on October 5, 2010, which is one of the requests at issue in the pending lawsuit *Data Trace Info. Services, et. al. v. Recorder of Cuyahoga County*.

I am Operations Manager for Data Trace. I am one of the parties to the suit, as is Data Trace.

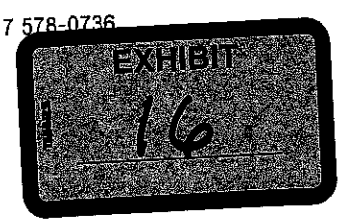
I understand that the change in Cuyahoga County government has resulted in significant institutional changes since the date of my October 5 request, and since our lawsuit began.

From remarks by representatives of your office that I have seen recently, I suspect that there may be a misunderstanding about the mechanics of how the recorder's office could comply with my October 5 request.

For over a decade, the recorder's office has scanned deeds, mortgages, and other instruments into its computer system, making digital images of each instrument. The recorder's office keeps those images as computer files.

As a backup, the recorder's office copies those original digital images onto what the office calls a "Master CD" – a compact disc. Each Master CD has backup copies of the original digital images of deeds, mortgages, and other instruments that the recorder's office recorded on one specific day.

7340 Shadeland Station, Suite 125, Indianapolis, Indiana 46256 Telephone 317 633-4181 Facsimile 317 578-0736



My request for digital copies of deeds, mortgages, and other instruments recorded in July and August, 2010 – onto CD and without the watermarks that appear on the recorder's website – does not require your personnel to scan any paper record onto a compact disc.

The effect of my October 5 request is to ask your office to dub onto blank CDs the Master CDs covering July and August, 2010.

Your office has a CD writer with multiple CD drives that allow your office to dub onto several blank CDs simultaneously the contents of one Master CD.

Of course, we still ask that the recorder's department adopt a policy that would apply the "at cost" provisions of the Public Records Act to the dubbed CDs or that the recorder's office reinstate the $1/per CD policy that the recorder's office deleted a few days after our lawyer deposed Lillian Greene in this suit, applying that policy to the dubbed CDs.

Sincerely,

Michael Stutzman
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Operations Manager
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Lillian J. Greene
County Recorder

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Phone (216) 443- 8194
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September 16, 2009

DataTrace Information Services
Attn: Michael A. Stutzman
1500 W. 3rd Street
Cleveland, Ohio 44113

Dear Mr. Stutzman:

As you are aware, the recent county budget crisis has caused all agencies to re-evaluate their own budgets in an effort to maximize income and cut expenses. Upon review, the previous annual fee of Five Thousand Dollars ($5,000.00) has not been increased since its implementation in 2003. As a result we must inform you that the annual subscription fee for computer disks of the images and index of our daily document recordings will increase as of January 1, 2010 to Seven Thousand Five Hundred Dollars ($7,500.00). The cost for single disks of our daily recordings will not increase. It will remain at the current rate of Fifty Dollars ($50.00) per disk (with each disk representing the documents/index for one business day's recording).

Even with this increase in fees, your companies are enjoying a substantial savings over the annual cost of purchasing individual disks, which would cost the average purchaser approximately $14,000.00 should they request a year's worth of documentation.

We look forward to continuing our longstanding association as we approach the coming year.

Yours truly,

Lillian J. Greene
Cuyahoga County Recorder

EXHIBIT
17

ATTACHMENT NOT SCANNED

STATE OF OHIO)
) ss: **AFFIDAVIT OF GREG KELLEY**
COUNTY OF CUYAHOGA)

I, Greg Kelley, being duly sworn, state as follows based upon my personal knowledge.

1. I am the Chief Technology Officer of Vestige, Ltd. I have held this position since May 2004. Vestige is a company that specializes in electronic discovery.

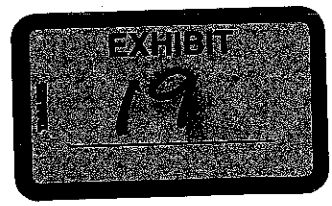
2. It is my understanding that in the case known as *State ex rel. Data Trace Information Services, LLC, et al. v. Recorder of Cuyahoga County Ohio*, Ohio Supreme Court No. 10-2029, attorneys for the Cuyahoga County Recorder sent Baker & Hostetler an optical compact disc ("CD") containing the source code for the recorder's website as it existed on June 30, 2008 and April 30, 2008.

3. In this case, source code can best be described as computer language that contains the content of a website.

4. On March 31, 2011, Don McCann at Baker Hostetler hired Vestige to take the source code provided by the recorder, and create a video showing the recorder's website as it looked on the Internet on April 30, 2008 and June 30, 2008, assuming the accuracy of the source code provided by the recorder.

5. On March 31, 2011, Mr. McCann sent me a copy of the CD containing the website source code that had been provided by the recorder's attorneys.

6. I downloaded the contents of this CD into a new, blank web site on a web server at Vestige. This allowed me to view the source code as an actual web site. A web server is a combination of computer hardware and software that allows me to display website source code as an actual website.



7. By copying the source code onto the web server and configuring the settings of the website appropriately, I was, through the use of VMWare software, able to view and navigate the recorder's website on my personal computer screen. I was thus able to view and access the contents of the recorder's website as it existed on April 30, 2008 and June 30, 2008, respectively.

8. The only items that I was not able to access on the recorder's website were the three links under the "Search Database" menu option. These links allow the browser to search for and view county recorded instruments using various search criteria. I could not access these links because I was not provided with the database associated with these particular links. I understand that the recorder did not provide Baker & Hostetler LLP with the data for these particular links.

9. Using VMWare screen capture software, I then made a video recording of my computer screen as I navigated and viewed the content of each of the links on the main menu of the recorder's website (other than the menu items under the "Search Database" link) as it existed on April 30, 2008. Using this same procedure, I also made a video recording of my computer screen as I clicked on and viewed the content of each of the links on the main menu of the Recorder's website (other than the menu items under the "Search Database" link) as it existed on June 30, 2008. These recordings were made in an AVI format.

10. I then converted the videos of my browsing activities from an AVI format to a WMV format. No loss of data was evident in the conversion. I then downloaded the video recordings onto a blank CD. An accurate copy of this CD is marked as **Exhibit 18.** These recordings can be viewed using Windows Media Player or any other media player capable of playing WMV videos, such as Winamp, by following the instructions in paragraph 13 below.

11. When I clicked on the "Video" menu option on the recorder's April 30, 2008 website, the menu displayed three separate links called "Filing a Document," "Meet the Recorder," and "Why Record," respectively. The website source code provided to me contained three video files called "Filing a Document.wmw," "Meet the Recorder.wmv," and "Why Record.wmv." These files were linked, respectively, to the "Filing a Document," "Meet the Recorder," and "Why Record" links on the recorder's April 30, 2008 website.

Thus, when I clicked on the "Filing a Document" link, the "Filing a Document.wmw" video file began to play on the Recorder's website. When I clicked on the "Meet the Recorder" link, the "Meet the Recorder.wmv" video file began to play. And when I clicked on the "Why Record" link, the "Why Record.wmw" video file began to play.

12. The CD marked as **Exhibit 18** contains accurate copies of the "Filing a Document.wmv," "Meet the Recorder.wmv," and "Why Record.wmv" video files. I copied these files onto the CD marked as **Exhibit 18** directly from the CD copy of the recorder's website source code CD. These files can be viewed using Windows Media Player or any other media player capable of playing WMV videos, such as Winamp, by following the instructions in paragraph 13 below.

13. To view the material on the CD marked as **Exhibit 18**, the user should perform the following steps:

a. Insert the CD into the CD or DVD drive on your desktop or laptop computer;

b. Double click on the "My Computer" icon on your desktop to display the list of drives on your computer;

c. Double click on the CD or DVD drive (typically the D:\ drive). You will see two file folder names: "Recorder Website 04-30-2008" and "Recorder Website 06-30-2008."

d. To view the Recorder's website as it existed on April 30, 2008, double click on the folder called "Recorder Website 04-30-2008." To view the Recorder's website as it existed on June 30, 2008, double click on the folder called "Recorder Website 06-30-2008."

f. If you double clicked on the "Recorder Website 04-30-2008" folder, you will see four file names:

(i) 04-30-2008 Site.wmv;

(ii) Filing a Document.wmv;

(iii) Meet the Recorder.wmv; and

(iv) Why Record.wmw.

To play any one of these files, simply double click on the file name. The file should open in the default media player for WMV files on your computer (likely Windows Media Player).

g. If you double clicked on the "Recorder Website 06-30-2008" folder, you will see a single file called "06-30-2008 Site.wmv." To play this file, double click on the file name. The file should then open in the default media player for WMV files on your computer (likely Windows Media Player).

I declare under penalty of perjury that the foregoing is true and correct. Further affiant sayeth naught.

Greg Kelley

SWORN TO AND SUBSCRIBED to before me on this 11 day of May 2011.

Theresa Gyorok
Notary Public

THERESA GYOROK
NOTARY PUBLIC • STATE OF OHIO
Recorded in Cuyahoga County
My commission expires Mar. 17, 2015

503339367.2

STATE OF OHIO)
) ss: **AFFIDAVIT OF DONALD McCANN**
COUNTY OF CUYAHOGA)

I, Donald McCann, being duly sworn, state as follows based upon my personal knowledge.

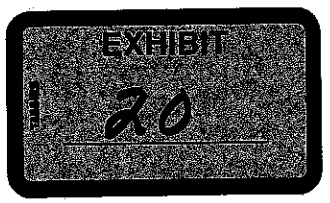
1. I am employed by Baker & Hostetler LLP as a litigation support analyst.

2. In March, 2011, David Marburger provided me with an optical compact disk (CD) he received from the Cuyahoga County Recorder's attorneys. This CD, which has been marked as **Exhibit 1**, contains the source code for the recorder's website as it existed on April 30, 2008 and June 30, 2008.

3. Using an Aleratec Copy Cruiser Pro 16 CD/DVD duplicator, I made a duplicate copy of all of the contents of the CD marked as **Exhibit 1** onto a blank CD. The Aleratec Copy Cruiser is a device used for making exact copies of data disks.

4. At the completion of the copying process, I inserted the CD copy into my computer, viewed the contents on the disk, and confirmed that the contents of the CD marked as **Exhibit 1** had been accurately copied.

5. Using a courier service, I then sent the CD copy I made of the recorder's website source code to Greg Kelley at Vestige, Ltd.



I declare under penalty of perjury that the foregoing is true and correct. Further affiant sayeth naught.

Donald McCann

SWORN TO AND SUBSCRIBED to before me on this 11th day of May 2011.

Notary Public

EDWARD T. MONAHAN
Notary Public, State of Ohio
My Commission Expires Feb. 4, 2013

503451492.1

ALL-STATE® LEGAL 800-222-0510 ED11 RECYCLED

IN THE SUPREME COURT OF OHIO

State, ex rel. Data Trace Information Services, LLC, et al., **Relators,**	(	**Case No.** 2010-2029
	(	**Original Action in Mandamus**
v.	(	
Recorder of Cuyahoga County, Ohio,	(	
Respondent.	(	

COUNTY OF CUYAHOGA

SS: AFFIDAVIT OF CHARLES HAYDEN

STATE OF OHIO

Charles Hayden, being duly sworn, does depose and state as follows:

1. I am competent to testify about the matters listed below based upon my first-hand knowledge.

2. On Tuesday, October 26, 1010, I went to the Cuyahoga County Recorder's office. While there I took a digital photograph of the warning notice posted in the office that day. The warning notice reads:

> WARNING Documents recorded in the recorder's office generally are considered to be public records. Other persons have access to the information contained in recorded documents.

3. Exhibit 23 is a copy of that digital photograph.

4. On January 6, 2011, I went to the Cuyahoga County Recorder's office and requested a paper copy of the recorder's public records policy from an employee at the counter. The employee gave me a copy of the policy, which is marked as Exhibit 25.

5. I am a former real estate title examiner, and now a senior docket clerk at Baker & Hostetler LLP's Cleveland office. For many years, I have regularly used the Cuyahoga County Recorder's website to search for recorded instruments, and I have experienced some of the limitations of using the website to find recorded instruments. One of those limitations is that the website does not make available for viewing any recorded instrument that exceeds a certain number of pages.

I declare under penalty of perjury that the foregoing is true and correct.

Charles Hayden

SWORN TO AND SUBSCRIBED in my presence on this 13th day of May, 2011.

Sheila A. Maio

Notary Public

SHEILA A. MAIO, Notary Public
State of Ohio, Cuyahoga County
My Commission Expires Oct. 17, 2015

My commission expires on _____.

ALL-STATE® LEGAL 800-222-0510 ED11 RECYCLED

WARNING

Documents recorded in the Register's office generally are considered to be public records. Other persons have access to the information contained in recorded documents.

PUBLIC RECORDS REQUEST POLICY

OF

THE CUYAHOGA COUNTY RECORDER'S OFFICE

LILLIAN J. GREENE, RECORDER

Introduction:

It is the policy of the Cuyahoga County Recorder's Office that openness leads to a better informed citizenry, which leads to better government and better public policy. It is the policy of the Cuyahoga County Recorder's Office to strictly adhere to the state's Public Records Act. All exemptions to openness are to be construed in their narrowest sense and any denial of public records in response to a valid request must be accompanied by an explanation, including legal authority, as outlined in the Ohio Revised Code. If the request is in writing, the explanation must also be in writing.

Section 1. Public records

This office, in accordance with the Ohio Revised Code, defines records as including the following: Any document – paper, electronic (including, but not limited to, e-mail), or other format – that is created or received by, or comes under the jurisdiction of a public office that documents the organization, functions, policies, decisions, procedures, operations, or other activities of the office. All records of the Cuyahoga County Recorder's Office are public unless they are specifically exempt from disclosure under the Ohio Revised Code.

Section 1.1

It is the policy of the Cuyahoga County Recorder's Office that, as required by Ohio law, records will be organized and maintained so that they are readily available for inspection and copying (See Section 4 for the e-mail record policy). Record retention schedules are to be updated regularly and posted prominently.

Section 2. Record requests

Each request for public records should be evaluated for a response using the following guidelines:

Section 2.1

Although no specific language is required to make a request, the requester must at least identify the records requested with sufficient clarity to allow the public office to identify, retrieve, and review the records. If it is not clear what records are being sought, the records custodian must contact the requester for clarification, and should assist the requestor in revising the request by informing the requestor of the manner in which the office keeps its records.

Section 2.2

The requester does not have to put a records request in writing, and does not have to provide his or her identity or the intended use of the requested public record. It is this office's general policy that this information is not to be requested.

Section 2.3

Public records are to be available for inspection during regular business hours, with the exception of published holidays. Public records must be made available for inspection promptly. Copies of public records must be made available within a reasonable period of time. "Prompt" and "reasonable" take into account the volume of records requested; the proximity of the location where the records are stored; and the necessity for any legal review of the records requested.

Section 2.4

Each request should be evaluated for an estimated length of time required to gather the records. Routine requests for records should be satisfied immediately if feasible to do so. Routine requests include, but are not limited to, meeting minutes (both in draft and final form), budgets, salary information, forms and applications, personnel rosters, recorded documents, etc. If fewer than 20 pages of copies are requested or if the records are readily available in an electronic format that can be e-mailed or downloaded easily, these should be made as quickly as the equipment allows.

All requests for public records must either be satisfied (see Section 2.4) or be acknowledged in writing by the (public office) within a reasonable time following the office's receipt of the request. If a request is deemed significantly beyond "routine," such as seeking a voluminous number of copies or requiring extensive research, the acknowledgement must include the following:

Section 2.4a – An estimated number of business days it will take to satisfy the request.

Section 2.4b – An estimated cost if copies are requested.

Section 2.4c – Any items within the request that may be exempt from disclosure.

Section 2.5

Any denial of public records requested must include an explanation, including legal authority. If portions of a record are public and portions are exempt, the exempt portions are to be redacted and the rest released. If there are redactions, each redaction must be accompanied by a supporting explanation, including legal authority.

Section 3. Costs for Public Records

Those seeking public records will be charged only the statutory cost of making copies.

Section 3.1 The standard charge for paper copies is $2.00 per page, subject to statutory exceptions for certain recorded documents.

Section 3.2 The charge for paper copies of all non-recorded, administrative documents is $.05 per page.

Section 3.3 The charge for downloaded administrative computer files to a compact disc is $1.00 per disc.

Section 3.3 There is no charge for non-recorded, administrative documents e-mailed.

Section 3.4 Requesters may ask that documents be mailed to them. They will be charged the actual cost of the postage and mailing supplies.

Section 4. E-mail

Documents in electronic mail format are records as defined by the Ohio Revised Code when their content relates to the business of the office. E-mail is to be treated in the same fashion as records in other formats and should follow the same retention schedules.

Section 4.1 – Records in private e-mail accounts used to conduct public business are subject to disclosure, and all employees or representatives of this office are instructed to retain their e-mails that relate to public business (see Section 1 Public Records) pursuant to the Cuyahoga County Board of Commissioners Resolution approving a policy for the use, management and retention of County communications utilizing emerging technologies, effective January 1, 2009.

Section 4.2 – The records custodian is to treat the e-mails from private accounts as records of the public office, filing them in the appropriate way, retaining them per established schedules and making them available for inspection and copying in accordance with the Public Records Act and the aforementioned Resolution of the Board of County Commissioners.

Section 5. Failure to respond to a public records request

The Cuyahoga County Recorder's Office recognizes the legal and non-legal consequences of failure to properly respond to a public records request. In addition to the distrust in government that failure to comply may cause, the Cuyahoga County Recorder's Offices' failure to comply with a request may result in a court ordering the Cuyahoga County Recorder's Office to comply with the law and to pay the requester attorney's fees and damages.

ADENDDUM 1:

CUYAHOGA COUNTY RECORDER'S OFFICE POLICY & PROCEDURES FOR BULK COMMERCIAL SPECIAL EXTRACTION REQUESTS

It is the policy of the Cuyahoga County Recorder's Office to comply with requests for copies of public records made under the Public Records Sections of Ohio Revised Code Sections 149.011 within a reasonable period of time after receiving the request for copies.

For the purposes of this policy, "bulk commercial special extraction request" means a request for copies of a record, or records, for information in a format other than the format already available, or information that cannot be extracted without examination of all items in a records series, class of records, or data base by a person who intends to use or forward the copies for surveys, marketing, solicitation, or resale for commercial purposes. "Commercial" means profit-seeking production, buying, or selling of any good, service, or other product.

Pursuant to the provisions of ORC 149.43, it is the policy of the Cuyahoga County Recorder's Office to limit the number of records requested by a person as a "bulk commercial special extraction request", to ten (10) records per month. This limit shall not apply to persons who certify that the person does not intend to use or forward the requested records, or information contained in them, for commercial purposes. For purposes of this policy, "commercial" shall be narrowly construed.

STATE OF OHIO)
) ss: **AFFIDAVIT OF BRENDA MARTINEZ**
COUNTY OF CUYAHOGA)

I, Brenda Martinez, being duly sworn, state as follows based upon my personal knowledge.

1. I was employed by the Cuyahoga County Recorder from August 20, 2001 to November 6, 2008 as a cashier in the recorder's office. I became the supervisor of the cashiers at the recorder's office in October 2007.

2. As a cashier, I was responsible for receiving deeds, mortgages, and other instruments brought to the Recorder's office for recording. I also collected the applicable recording fees. In addition, I was occasionally responsible for making copies of the digital images of county recorded instruments onto optical compact disks – CDs.

3. When someone wants to file a deed, mortgage, or other instrument with the county recorder, they do so by giving the instrument to one of the cashiers at the recorder's office.

4. At the time I was a cashier, I performed the following steps to record an instrument.

a. First, I would take the paper document and collect the applicable recording fee from the person who brought the document in to be recorded.

b. Second, I would assign a unique number to that document, called an AFN, which stands for Automated File Number. That number shows the date that the county recorded the deed and the sequence in which it was recorded that day. For example, if a deed was the 241st instrument recorded on November 16, 2007, the AFN would be 200711160241. "2007" is

the year; "11" the month of November; "16" is the date of that month; and "0241" signifies that the deed was the 241st instrument that the county recorded that day.

c. Third, I would print out an adhesive label that listed the document's AFN and the time of filing. I would stick this label on the paper document.

d. Fourth, I would take the person's name and phone number in case there was a missing page or some other problem with the document.

e. Fifth, I would cause the paper document to be scanned into the recorder's computer system using a digital scanner.

f. Sixth, I would return the original paper document to the person who brought it in to be recorded. The recorder's office does not keep the original document; it only maintains the digital image of the document.

5. The Recorder's office made a back-up copy on a CD of the digital images of the instruments recorded on a single day. It made back-up copies for each day that the office was open. The recorder's office referred to those back-up copies as "master CDs."

6. The office had a CD-burner that could copy digital records onto blank CDs, including copy the contents of one CD onto several blank CDs at the same time. When Patrick O'Malley was the Cuyahoga County Recorder, the recorder's office provided CD copies of each day's recorded instruments to Data Trace, Chicago Title, and another title company for a fee of $50 per company per CD. The recorder's office used its own supplies of CDs.

8. While I was working at the recorder's office, I was trained how to make the master CD and how to make what amounted to CD duplicates of the master CD. I performed those tasks when the employees who usually did those tasks weren't available. I think that I did that two or three times a month on average.

9. When I made CD recordings, I typically did it at the very end of the work day.

10. Although the CD recording process only took a few minutes, I typically did not wait around while the CDs were being burned. Instead, I pushed the buttons to start the recordings and left when the office closed for the day. When I returned to work the next morning, I removed from the CD-burner the CDs that were supposed to go to the title companies, and prepared them to be available for pick up.

I declare under penalty of perjury that the foregoing is true and correct. Further affiant sayeth naught.

Brenda Martinez

SWORN TO AND SUBSCRIBED to before me on this 13th day of May 2011.

Notary Public

DAVID L. MARSINGER, Attorney
NOTARY PUBLIC - STATE OF OHIO
My Commission Has No Expiration Date
Section 147.03 R. C.

503461497.2

STATE OF OHIO)
) **ss: Affidavit of Jayson Gerbec**
COUNTY OF CUYAHOGA)

I, Jayson Gerbec, being duly sworn, state as follows based upon my personal knowledge.

1. In the spring of 2011, I will graduate from Cleveland State University with a bachelor's degree. I majored in business economics.

2. In the summer of 2010, I was a research intern at the Federal Reserve Bank of Cleveland.

3. One of my assignments at the Federal Reserve that summer was to download digital copies of recorded deeds from the Cuyahoga County Recorder's website for the purpose of obtaining information from those deeds. I had to locate and download multiple deeds from the website.

4. To do my assignment, I logged onto the Cuyahoga County Recorder's website and followed its directions for performing searches to locate the deeds that I was supposed to find. Those directions required me to type in a regularly changing security code of distorted letters or combination of letters and numbers called a "captcha," such as "4 Q k A," to locate, view and download one digital copy of one deed.

5. It took me many hours to locate, view, and download the deeds from the website. Typically, the deeds that I was downloading were only two or three pages

each, but the website's speed was slow and it took time to type in each changing captcha for locating, viewing, and downloading each deed.

6. In March 2011, during my senior year, a professor at Cleveland State University consulted with me about doing some research for a lawyer. I was to test whether it would be difficult for an ordinary citizen to obtain digital copies of the Cuyahoga County's electronically-stored recorded instruments on a CD and to see how much money the county would charge as a fee to an ordinary citizen. I knew from my experience at the Federal Reserve Bank that working with a volume of recorded deeds via the county recorder's website was, as a practical matter, unworkable, so I saw the benefit of having digital copies on CD. I agreed to help. I understood that the lawyer was representing companies in a lawsuit over whether it could get copies of recorded instruments from the county recorder on CD for a reasonable fee.

7. I then went to the Cuyahoga County Recorder's office. There, I spoke with a clerk handling requests for copies of deeds and other records. I asked for a digital copy of every deed and other records that the county had recorded on four specific dates in the year 2010. I asked the clerk to put the copies on blank CDs. I said that I would pay a reasonable fee and offered to supply the blank CDs. I did not volunteer that my request was a test or had anything to do with the lawsuit.

8. The clerk told me that the recorder's office does not make copies of records on CD, and so denied my request.

9. I called the lawyer for the company suing the recorder's office – David Marburger – and told him about my experience there. Mr. Marburger told me that the county recorder already has the digital images of deeds on CD, and that it was just a matter of dubbing that CD onto a blank CD. He referred me to an online comment that he said that he'd posted on cleveland.com in response to a *Plain Dealer* story about this lawsuit. Mr. Marburger's posted comment said that the recorder's office keeps a master CD of its recorded deeds and other records.

10. Mr. Marburger also provided me with a copy of Ohio's open records law, directing me to a provision that says that a government office must provide a copy of a public record in the same format in which the government keeps that record. So if the recorder keeps copies of deeds on CD, it would have to provide copies to the public also on CD if that's what someone requests.

11. Soon afterward, in April, I returned to the recorder's office and repeated my earlier request. I spoke with the same clerk who'd rejected my request. I said that I understood the open records law to give me the right to get copies of the records on CD. Again, I did not volunteer that my request was a test or had anything to do with the lawsuit.

12. Then the clerk had me speak with a man named Larry from the recorder's computer department. I repeated my request to Larry and referred to the same part of the open records law that I'd emphasized to the clerk. Larry told me that the recorder's office does not keep any recorded instruments on CD. I told Larry that I had

read a comment on cleveland.com that said that the county recorder *does* keep copies on CD. Larry responded with a remark the gist of which was that he didn't want to get involved legally. He led me to an administration office, where I left four blank CDs along with my request in writing, my cell phone number, and my e-mail address. Someone there said that they'd get back to me about my request.

13. As more than two weeks passed, I heard nothing from the recorder's office. Then, on May 2, 2011, I received an e-mail that said it was from Larry Patterson of the recorder's office. A copy of that e-mail is marked as **Exhibit 28**.

14. Mr. Patterson's e-mail said: "The Cuyahoga County Recorder's Office will copy the documents you requested onto one or more cd-roms upon payment of the $2-per-page statutory fees required under R.C. 317.32(I). As your request indicated that you will pay a 'reasonable fee' for the requested copies, please confirm that you will pay the $2-per-page fee and we will prepare the copies you requested."

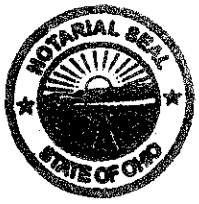
15. I replied to Mr. Patterson by asking how much his office would charge me for the CD copies at that $2-per-page fee. A copy of my e-mail reply is marked as **Exhibit 30.**

16. Mr. Patterson replied by e-mail the next day. His answer: $35,568 for 4 dubbed CDs. A copy of that e-mail is marked as **Exhibit 31**.

I declare under penalty of perjury that the foregoing is true and correct.

Jayson Gerbec

SWORN TO AND SUBSCRIBED to before me on this 13 day of May 2011.



MOLLY A. GILLAHAN
Notary Public, State of Ohio
My Commission Exp. Jan. 22, 2013

Notary Public

From: "Larry Patterson" <lpatterson@cuyahogacounty.us>
Date: Mon, May 2, 2011 12:36 PM
To: "Jayson Gerbec" <jaysongerbec@gmail.com>

Dear Mr. Gerbec:

I write in response to your April 14, 2011, request for digital copies of all deeds, mortgages, liens, releases and other documents recorded by the Cuyahoga County Recorder's Office on September 30, 2010, October 29, 2010, November 30, 2010, and December 30, 2010.

The Cuyahoga County Recorder's Office will copy the documents you requested onto one or more cd-roms upon payment of the $2-per-page statutory fees required under R.C. 317.32(I). As your request indicated that you will pay a "reasonable fee" for the requested copies, please confirm that you will pay the $2-per-page fee and we will prepare the copies you requested. Otherwise, you may view the requested documents for no charge using the public access terminals at the Recorder's office during normal business hours, and you also can view and download those or any other recorded documents for no charge using the Recorder's Office website at http://recorder.cuyahogacounty.us/http://recorder.cuyahogacounty.us.

Please feel free to contact me with any questions you may have.

Very truly yours,

Larry Patterson
Office Of The Fiscal Officer
Recorder Division
Office: (216) 443-7311

From: "Jayson Gerbec" <jaysongerbec@gmail.com>
Date: May 2, 2011 1:47 PM
To: "Larry Patterson" <lpatterson@cuyahogacounty.us>

Mr. Patterson,

Thank you very much for your response. Do you have an estimate of the cost to have these cds made for me?

Jayson Gerbec

From: "Larry Patterson" <lpatterson@cuyahogacounty.us>
Date: May 3, 2011 3:51:45 PM EDT
To: "Jayson Gerbec" <jaysongerbec@gmail.com>
Subject: Re: Request

Greetings,

3,834 documents containing 17,784 pages @ $2 per page = $35,568

Yours Truly

Larry Patterson
Office Of The Fiscal Officer
Recorder Division
Office: (216) 443-7311

State of Ohio)
) SS: Affidavit of Peter Shulman
Cuyahoga County)

I, Peter Shulman, being duly sworn, state the following based on my personal knowledge:

1. I am an assistant professor of history at Case Western Reserve University in Cleveland, Ohio. One of my areas of expertise is the history of technology, including the history of the technology of copying records, such as what is commonly referred to as photocopying. A copy of my curriculum vitae is marked as **Exhibit 33**.

2. The law firm of Baker & Hostetler LLP retained me to explain how the technology of copying of records worked in the context of Ohio statutes that govern the copying of recorded instruments, such as deeds to land, that county recorders keep. For example, section 317.32(I) of the Ohio Revised Code says that a county recorder is to charge $2/page "[f]or photocopying a document, other than at the time of recording and indexing." And section 317.32(J) of the Ohio Revised Code says that a county recorder is to charge the same fee for "local facsimile transmission of a document," and a higher fee for "long distance facsimile transmission of a document."

3. At Baker & Hostetler's request, I examined the statutory predecessors to those statutes to see when the legislature first adopted such terms as "photocopying a document." From my own expertise and research, I explain how that technology worked at that time, and I relate it to the present day. I also examined the

language describing technology in section 9.01 of the Ohio Revised Code and its predecessor provisions.

4. Also at Baker & Hostetler's request, I compared the way that ordinary photocopying a paper record has worked with the way that copying the content of one compact disc onto a blank compact disc has worked. Through that comparison, I explain the extent to which copying the content of one compact disc onto a blank compact disc analogizes to photocopying a paper record. I also explain the extent to which printing the content of an electronically-stored record onto paper is comparable to using what commonly is called a "photocopying machine" to copy the content of paper records onto blank sheets of paper. I evaluated transmitting a document by facsimile in much the same way.

5. Baker & Hostetler provided me with copies of the following legislation pertaining to section 317.32 of the Ohio Revised Code:

§ 1157 (eff. Jan. 1, 1880); Ohio Revised Statutes, 2d ed. 420 (1882).

Sub. S.B. 106 (eff. May 21, 1943); 120 Laws of Ohio 269 (1944).

H.B. 375 (eff. Apr. 11, 1945); 121 Laws of Ohio 67 (1946).

Am. S.B. No. 100; (eff. July 26, 1949); 123 Laws of Ohio 674 (1950).

Am. S.B. No. 263 (eff. June 8, 1951); 124 Laws of Ohio 380 (1951).

§ 2778 (eff. Sept. 7, 1951); Page's Ohio General Code Annotated (1951).

Am. H.B. No. 177 (eff. Oct. 15, 1953); 125 Laws of Ohio 366 (1954).

Am. H.B. No. 452 (Sept. 20, 1955); 126 Laws of Ohio 823 (1955).

Am. H.B. No. 9 (eff. July 17, 1959); 128 Laws of Ohio 542 (1959).

Am. H.B. No. 68 (eff. June 29, 1965); 131 Laws of Ohio 1661 (1965).

Am. S.B. No. 130 (eff. Oct. 22, 1969); 133 Laws of Ohio 334 (1970).

Am. Sub. H.B. No. 1 (eff. Aug. 26, 1977); 137 Laws of Ohio 1412 (1979).

H.B. No. 222 (eff. Jan. 17, 1977); 136 Laws of Ohio 1997 (1976).

Am. S.B. 179 (eff. Oct. 31, 1979); 1979 Baldwin's Ohio Legis. Serv. Ann. 5-258.

Am. Sub. H.B. 528 (eff. Mar. 3, 1983); 1982 Baldwin's Ohio Legis. Serv. Ann. 5-443.

H.B. No. 270 (eff. Sept. 8, 1988); 1988 Baldwin's Ohio Legis. Serv. Ann. 5-605.

Am. H.B. No. 20 (eff. Jan. 1, 1992); 1991 Baldwin's Ohio Legis. Serv. Ann. 5-51.

Am. Sub. H.B. No. 152 (eff. July 1, 1993); 1993 Ohio Legis. Bull. 202.

S.B. 114 (eff. Aug. 10, 1994); 1994 Ohio Legis. Bull. 750.

Am. Sub. H.B. No. 790 (eff. Sept. 12, 1994); 1994 Baldwin's Ohio Legis. Serv. Ann. 5-751.

Sub. H.B. No. 644 (eff. Nov. 6, 1996); 1996 Baldwin's Ohio Legis. Serv. Ann. L-3205.

Am. Sub. S.B. No. 223 (eff. Apr. 5, 1999); 1998 Baldwin's Ohio Legis. Serv. Ann. L-2534.

Am. Sub. S.B. No. 74 (eff. July 1, 2001); 2001 Baldwin's Ohio Legis. Serv. Ann. L-1165.

Am. Sub. H.B. No. 95 (eff. Aug. 1, 2003); 2003 Baldwin's Ohio Legis. Serv. Ann. L 255, L385.

Sub. S.B. No. 202 (eff. Apr. 15, 2005); 2004 Baldwin's Ohio Legis. Serv. Ann. L-2102.

Am. Sub. H.B. 562 (eff. Sept 23, 2008); 2008 Baldwin's Ohio Legis. Serv. Ann. L-1161, L-1217.

Section 317.32 in effect as of April, 2011

6. Baker & Hostetler also provided me with copies of the following legislation pertaining to section 9.01 of the Ohio Revised Code:

§ 32-1 (in eff. in 1945); Page's Ohio General Code Annotated (1937).

Am. S.B. 35 (eff. July 12, 1945); 121 Laws of Ohio 338 (1945).

Am. S.B. 14 (eff. Apr. 28, 1949); 123 Laws of Ohio 56 (1950).

Am. Sub. S.B. 44 (eff. June 12, 1951); 124 Laws of Ohio 485 (1951).

§ 9.01 (eff. 1952); 125 Laws of Ohio 26 (1952).

Am. H.B. No. 604 (eff. Oct. 12, 1961); 129 Laws of Ohio 1528 (1961).

Am. Sub. H.B. no. 205 (eff. Oct. 14, 1976); 136 Laws of Ohio 1941 (1976).

Am. Sub. H.B. No. 238. (eff. July 1, 1985); 1985 Baldwin's Ohio Legis. Serv. with Advance Annotation Service 5-205.

Am Sub. H.B. No. 95 (eff. Sept. 26, 2003); 2003 Baldwin's Ohio Legislative Service Annotated L-255, L-260.

§ 9.01 in effect as of April, 2011.

7. My analysis and explanation is marked as **Exhibit 34**.

8. **Exhibit 35** is an excerpt from the 2008 edition of the book "More How Stuff Works" by Marshall Brain. It accurately depicts and explains the copying technologies that it describes.

Peter Shulman

Sworn to and subscribed before me in my presence on this 13th day of May, 2010.

Notary Public

DAVID L. MARBURGER, Attorney
NOTARY PUBLIC - STATE OF OHIO
My Commission Has No Expiration Date
Section 147.03 R. C.

Peter A. Shulman

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Position

CASE WESTERN RESERVE UNIVERSITY
Cleveland, OH
Assistant Professor of History, *2008-present*

THE JOHNS HOPKINS UNIVERSITY
Baltimore, MD
Andrew W. Mellon Postdoctoral Fellow in the Humanities, *2007-2008*

Education

MASSACHUSETTS INSTITUTE OF TECHNOLOGY
Cambridge, MA
Ph.D., History, Anthropology, and Science, Technology, and Society (HASTS), *June 2007*
Dissertation: "Empire of Energy: War, Environment, and Geopolitics before the Age of Oil"
Committee Members: David Kaiser (chair), Harriet Ritvo, Meg Jacobs, Christopher Capozzola

Bachelor of Science in Mathematics, *June 2001*.
Minor: Earth, Atmospheric, and Planetary Science

JOHNS HOPKINS UNIVERSITY
Baltimore, MD
Coursework: Biochemistry, History of Medicine, *Summer 1995*

Academic Honors & Awards

Inaugural 2007 Benjamin Siegel Teaching Prize, MIT, for teaching on issues in science, technology, and society.

Society for the History of Technology's 2005 Joan Cahalin Robinson Prize "for the best presented paper at a SHOT meeting by an individual delivering his or her first paper at the meeting."

Honorable mention for the 2003 Siegel Prize, MIT, for paper "'Science Can Never Demobilize': The United States Navy and Petroleum Geology, 1898-1924"

Fellowships & Grants

Smithsonian Institution Postdoctoral Fellowship, 2007, *declined.*

American Academy of Arts and Sciences, Visiting Scholar Program, 2007-2008, *declined.*

MIT's Hugh Hampton Young Memorial Fund Fellowship, 2006-2007

MIT Center for International Studies Summer Study Grant, 2006

Naval Historical Center's Rear Admiral John D. Hays Pre-Doctoral Fellowship in U.S. Naval History, 2006-2007

Society for the History of American Foreign Relations Stuart L. Bernath Dissertation Grant, 2006

Naval War College's Edward Miller Fellowship in Naval History, 2005-2006

American Historical Association's Albert J. Beveridge Grant for Research in the History of the Western Hemisphere, 2005

MIT Center for International Studies Energy, Technology, and International Affairs Summer Study Grant, 2005

Dibner Institute for the History of Science and Technology, Graduate Student Fellowship, 2004-2005 and 2005-2006

Refereed Publications

Engines and Empire: America, Energy, and the World, 1840-1940, book manuscript in preparation.

"Empire and the Politics of Information, 1840-1860," article manuscript in preparation.

"The Prophet and the Pessimist: Narrating the Future of Energy Transitions in the 19th Century and Today," chapter draft submitted to Boston University's Frederick S. Pardee Center for the Study of the Longer-Term Future, John E. Sawyer Seminar in Energy & Society projected edited volume.

"The Making of a Tax Break: The Oil Depletion Allowance, Scientific Taxation, and Natural Resource Policy in the Early 20th Century," *Journal of Policy History* (expected Summer 2011).

"Linking Energy to Climate (Before 1974)" *Wiley Interdisciplinary Reviews: Climate Change* 1, no. 6 (Nov/Dec 2010): 773-80.

"'Science Can Never Demobilize': The United States Navy and Petroleum Geology, 1898-1924," *History and Technology* **19** (2003): 365-385.

"Analysis of US energy scenarios: Meta-scenarios, pathways, and policy implications," with Richard Silberglitt and Anders Hove, *Technological Forecasting and Social Change* **70** (2003): 297-315.

Reviews, White Papers, and Editorials

Review of *Engineering Nature: Water, Development, & the Global Spread of American Environmental Expertise* (*Business History Review*, forthcoming)

Review of *Mass Destruction: The Men and Giant Mines that Wired America and Scarred the Planet* (*Technology and Culture*, forthcoming).

"A Catastrophic Accident of Normal Proportions," H-Energy, *July 2010*.

"Thinking in Scales," H-Energy, *January 2010*.

Essay Review "Energy and Everything Else: Vaclav Smil's *Energy in Nature and Society*," *Technology and Culture*, **50** (4), November 2009, 915-918.

Review of *Power Struggles: Scientific Authority and the Creation of Practical Electricity Before Edison*. *Isis* **100** (3), September 2009, 679-680.

Review of *Canada's Victorian Oil Town: The Transformation of Petrolia from Resource Town into a Victorian Community*. *Technology and Culture*, **49** (2), April 2008, 496-8.

"The Lorax Lobby," Review of the *Environment, Inc.: From Grassroots to Beltway*. H-Environment, *August 2007*

"Learning from the Past: Energy and Society at MIT," Energy Research Council White Paper, with Rosalind Williams, Merritt Roe Smith, and Meg Jacobs, 2005.

"Thinking Beyond the Laboratory: An Open Letter to President Hockfield," *The Tech* **125** (44) 10/4/2005.

"Inventing Institutions, Teaching Technology," [Review of the book Mind and Hand: The Birth of MIT]. *Chemical Heritage* **24** (3), Fall 2006, 45.

Conferences, Seminars, & Invited Lectures

California Institute of Technology, invited History Department Seminar, April 2011, presenting "Empire and the Politics of Information, 1840-1860."

American Historical Association Annual Meeting, January 2011, presented "Inventing the Logistics of Empire: Coal and American Naval Education, 1880-1920."

Boston University's Frederick S. Pardee Center for the Study of the Longer-Term Future, John E. Sawyer Seminar in Energy & Society (invited), October, 2010, presented "The Prophet and the Pessimist: Narrating the Future of Energy Transitions in the Nineteenth Century and Today"

Policy History Conference, 2010, presented "Coal, Slaves, and Constructing the 19th Century U.S. Empire."

Massachusetts Historical Society's Boston Environmental History Seminar (invited), March 10, 2009, presented "Ships, Security, and the Politics of Trees: The Maritime Origins of American Forest Conservation."

University of Guelph's 2008/2009 Hammond Lecture Series on Energy and the Environment (invited), March 7, 2009, presented "The Prophet, the Pessimist, and the Petroleum Geologist; Or, How We Used to

Think About the Future of Energy."

Rethinking Urban History: Technology, Environments, and Politics at Case Western Reserve University, 2008, presented "Machine Politics and the Politics of the Machine: Meaning and Metaphor in Industrializing America."

Society for the History of Technology Annual Meeting, 2008, presented "Machine Politics and the Politics of the Machine: Meaning and Metaphor in Industrializing America."

History of Science Society Annual Meeting, 2007, presented "Swamps, Surveying, and Security: The Maritime Origins of American Forest Conservation."

American Society for Environmental History Annual Meeting, 2007, presented "Ruling the Waves? Steam Travel and the Ocean Environment, 1830-1900." [session organizer]

American Historical Association Annual Meeting, 2007, presented "The Berth of Empire: Coal Networks and Steam Power in American Foreign Relations." [session organizer]

Society for the History of American Foreign Relations Annual Meeting, 2006, presented "'Incalculable Benefits to Commerce': The Quest for Coal and American Expansion in the Pacific, 1840-1860"

MIT's "Big Questions After Big Hurricanes," November 15, 2005; co-organized symposium "What's So Natural About Natural Disasters?" to discuss social, political, and historical aspects of Hurricane Katrina

Society for the History of Technology Annual Meeting, 2005, presented "Alaska: Infinite Coal Mine of the Imperial Imagination" (*Recipient of Robinson Prize, 2005*)

New York University's International Center for Advanced Studies (invited), April, 2005; presented at roundtable discussion on oil, technology, and the construction of economic knowledge

American Society for Environmental History Annual Meeting, 2005; presented "Petroleum Politics: National Security and the Legacy of Teapot Dome"

History of Science Society Annual Meeting, 2004; presented "Why Let A Petroleum Geologist File Your Taxes?"

Joint Atlantic Seminar in the History of the Physical Sciences (JASHOPS) 2003; presented "'Science Can Never Demobilize': The United States Navy and Petroleum Geology, 1898-1924"

"Under Construction IV" 2003, Graduate Student Conference in the History and Social Study of Science and Technology; co-planned event and presented "Selling Scientific Theory: I.C. White and the (eventual) Acceptance of Anticlines"

Teaching

Spring 2011, Teaching "Technology in America" and graduate seminar in "Readings in the History of American Technology"

Spring, 2010, Taught "Energy and Environment in American History" and "The U.S. in the World"

Fall, 2009, Taught "Introduction to American History" and graduate seminar in "Readings in the History of American Technology"

Spring, 2009, Taught "North American Environmental History" (Graduate and Undergraduate sections)

Fall, 2008 Taught graduate seminar in "Readings in the History of American Technology" and "Issues and Methods in History"

Spring, 2008 Taught "Introduction to Environmental History"

Fall, 2006 and Fall, 2007 Taught "Energy and Environment in American History"

Spring, 2004: Teaching Assistant, Professor Christopher Capozzola, "21H.102: The Emergence of Modern America"

Spring, Fall 2003: Teaching Assistant, Professor Meg Jacobs, "21H.126: America in Depression and War"

Service

Field

Society for the History of Technology (SHOT) Robinson Prize Committee (2009)

SHOT 2011 Annual Meeting Local Organizer

Case Western Reserve University

Sustainability Alliance

SOURCE Advisory Board

Kelvin Smith Library Strategic Planning Committee

History Department

Graduate Committee

Library Liaison

Western Reserve Historical Society

Cleveland Jewish Archives Advisory Committee

Community

B'nai Jeshurun Weingold Forum Lecture, "We Are All Historians: the Ethics of History and Memory in Contemporary Culture," November 4, 2010

Refereeing *Historical Studies in the Natural Sciences, Technology and Culture*

Languages *Spanish*: read and speak; *German*: read; *French*: read; *Hebrew*: read, speak, and write

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Assistant Professor of History
Case Western Reserve University

Documents and Duplication: The Perspective of a Historian of Technology

Outline:

I. Introduction
II. Technologies of Duplication in §317.32
  A. Manual and Mechanical Means
  B. "The photostatic or similar processes"
  C. Photocopying
  D. Facsimile Transmission
III. The Processes considered together
  A. What about the CD-ROM?
  B. The Trouble with digital "pages"
  C. Paying for printing
IV. A Historian's View

I. Introduction

This report focuses on two provisions of the Ohio Revised Code (outside the Public Records Act) that address the technologies of duplication allowed to County Recorders. Section 9.01, covering the preservation and maintenance of official records, includes a range of technologies that various offices and officials in the state may use to fulfill their responsibilities. This list of technologies has changed over time, gradually incorporating new techniques and processes as they have become available or widely used. Today, this list includes "any photostatic, photographic, miniature photographic, film, microfilm, or microphotographic process, or perforated tape, magnetic tape, other magnetic means, electronic data processing, machine readable means, or graphic or video display, or any combination of those processes, means, or displays."[1] Some of these technologies (like perforated tape) are more or less defunct, have not been used for decades, and are clearly relics of past legislation. Other technologies mentioned in §9.01, like magnetic storage or "electronic data processing" are broad terms that effectively embrace every widely used form of storing, manipulating, and reproducing information on a computer now in use.

The second provision of the Ohio Revised Code dealing with duplication technologies is Section 317.32, which specifies the fees that County Recorders must charge for various services. Although both §9.01 and §317.32 (and their predecessors) have undergone regular revisions stretching back to the early 20th century, §317.32 only mentions four kinds of technologies for duplication employable at some stage of the recording, indexing, certifying, and duplicating activities of the office. These are:

[1] Ohio Revised Code §9.01 as in effect as of April, 2011.

1) mechanical means by hand or typewriter, found in subsections (C) and (D), and (F);
2) "the photostatic or similar processes," found in subsection (K);
3) photocopying, found in subsections (A), (B), and (I);
4) and finally, "facsimile transmission," more commonly known as faxing, found in subsection (J).

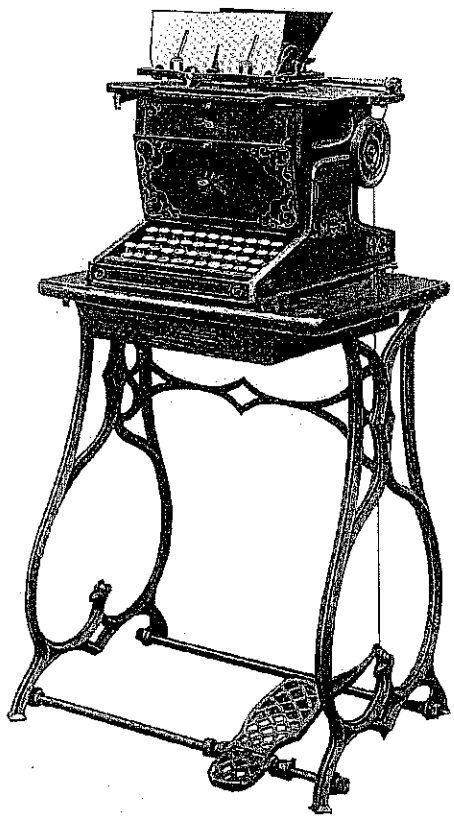
Since the question at stake is whether the duplication of the data from one CD-ROM to another (or, equivalently, the duplication, or "burning," of data from a computer hard drive to a CD-ROM, a point I'll discuss below) is embraced by the fees County Recorders are instructed to assess, it is worthwhile to examine what each of the four technologies mentioned in §317.32 mean, historically as well as contemporarily.

II. Technologies of Duplication in §317.32

A. Manual and Mechanical Means

The first technology embraces mechanical means of writing by hand or through a typewriter. The statute explicitly refers to "manual or typewritten recording" in subsection (C), "entering any marginal reference" in subsection (D), and "recording manually any plat not exceeding six lines" in subsection (F). It is not necessary to explain what is meant by a manual process—it is clearly what we ordinarily think of as writing with a pen, pencil, or other implement. The typewriter, in contrast, traces its origins to a series of mechanical writing machines built in the second quarter of the 19th century by which an operators pushed buttons (and eventually a keypad) that caused letter-shaped hammers to deposit ink on a sheet of paper. After the Civil War, more sophisticated typewriters were developed, evolving through a variety of designs, and by the mid-1870s, these machines had a familiar form: a keypad with letters marked on it, each key triggering a hammer with the same letter raised on it to strike an inked ribbon, thus depositing the letter's shape on a piece of paper. By the 1890s, typewriters were widely adopted in commercial, industrial, and government offices. While their design in the 20th century increasingly incorporated electronics, they remained at their heart mechanical devices.[2]

[2] Terry Abraham, "Charles Thurber: Typewriter Inventor," *Technology and Culture* **21**, no. 3 (July, 1980): 430-4; Sharon Hartman Strom, *Beyond the Typewriter: Gender, Class, and the Origins of Modern American Office Work, 1900-1930* (Urbana: University of Illinois Press, 1992), esp. 172-226; Bruce Bliven, Jr., *The Wonderful Writing Machine* (New York: Random House, 1954); Wilfred A. Beeching, *Century of the Typewriter* (Bournemouth: British Typewriter Museum, 1990); Richard N. Current, *The Typewriter and the Men Who Made It* (Urbana: University of Illinois Press, 1954).



The first Remington typewriter, 1874. From Richard N. Current, *The Typewriter and the Men Who Made It* (Urbana: University of Illinois Press, 1954), 71.

B. "The photostatic or similar processes"

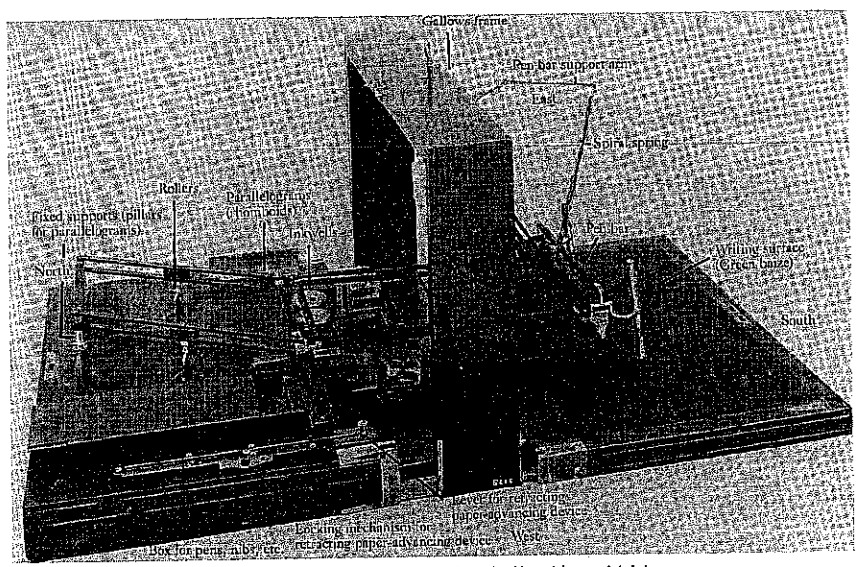
The second technology for which a County Recorder must charge a fee, "the photostatic or similar processes," is one that was once very familiar but today largely unused. The term "photostat" first appears in reference to Recorder fees in the Ohio Code in 1943, when §2779 was amended to set the fee for photostat use in recording land documents—"any map, plat or print," and again in 1945, when the related §2778 was amended to set a fee (60¢ per page) for using the photostat process to record or certify the copying of a legal document.[3] "Photostat" originally referred to a specific product, just as did Kleenex (a disposable facial tissue), Ketchup (a tomato catsup), or Thermos (a portable vacuum flask). *The* Photostat was manufactured by the Eastman Kodak Corporation beginning in 1911.[4] Generically, the Photostat was a device that applied the principles of photography to the duplication of documents. The Photostat (and its competitors like the Rectigraph)

[3] Sub. S.B. 106 (eff. May 21, 1943); 120 Laws of Ohio 269 (1944) and H.B. 194 (eff. Jul. 12, 1945); 121 Laws of Ohio 384 (1946).

[4] I am reminded that the Photostat is, in fact, a proper name for a particular product as the automatic spell-checker on my word processor (on which I am typing this report) insists on capitalizing the word whenever I begin it with a lower case "p."

allowed offices to do something they had never been able to do before: produce a legible copy of any document, no matter how old.

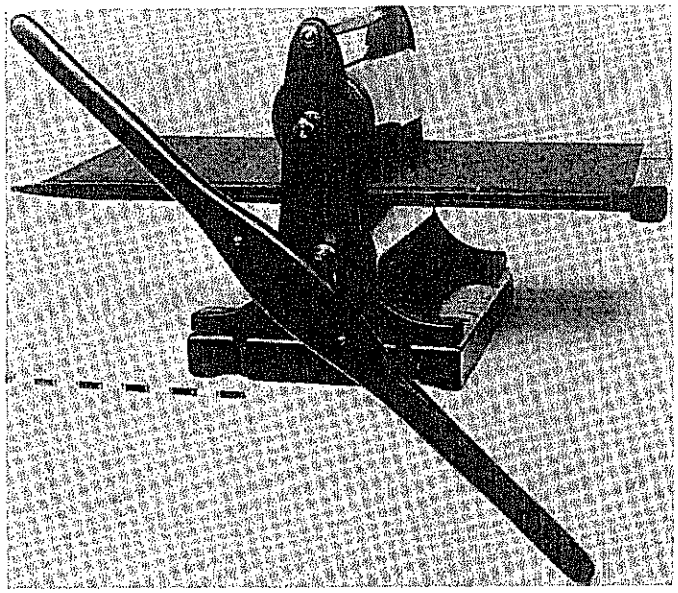
Though we tend to remember 19th century office work through Ebenezer Scrooge's counting house clerk, Bob Cratchit, stooped over his desk with a pen in Charles Dickens' *A Christmas Carol*, or the tedious law office in Herman Melville's "Bartleby the Scrivener," the 19th century actually saw a proliferation of mechanical and chemical devices to duplicate documents, all aimed at easing the labor of clerks and producing better and more reliable records, especially of correspondence. A full accounting of these devices is beyond the scope of this report, but they include a number of once-popular pieces of equipment. What were variously known as *pantographs* or *polygraphs* were mechanical contraptions, widely used in the late 18th and early 19th centuries (though older versions existed, too) that allowed users to compose a document with one pen while a second, attached pen (or a third or a forth), mimicked the motion of the first and produced a document that was an exact replica of the original.



The "Hawkins & Peale Patent Polygraph No. 37," shown from the side, with parts labeled

Silvio Bedini, *Thomas Jefferson and His Copying Machines* (Charlottesville, VA: University Press of Virginia, 1984), 69.

Copying presses, also widely used since the late 18th century, permitted a user to compose a document with pen and ink, lay a piece of thin, dampened tissue paper atop the fresh ink, and by compressing it under the weight of the copying press, transfer some of the ink to the tissue paper. (Since the text pressed in this manner would be a mirror image of the original text, a reader would view the tissue paper from the non-inked side, through which the text appeared in its usual manner.) Letter press books, still often found in archival collections, are results of use of copying presses.



Fixed or stationary copying press made by James Watt and Company. (Courtesy of the Science Museum, South Kensington, London)

Silvio Bedini, *Thomas Jefferson and His Copying Machines* (Charlottesville, VA: University Press of Virginia, 1984), 14.

Mimeograph machines were another product whose name has come to stand for the more generic device for producing duplicating stencils. These stencils allowed a user to write on special paper atop a rough metal surface, thus perforating the paper and allowing it to be used as stencil for running off duplicates.

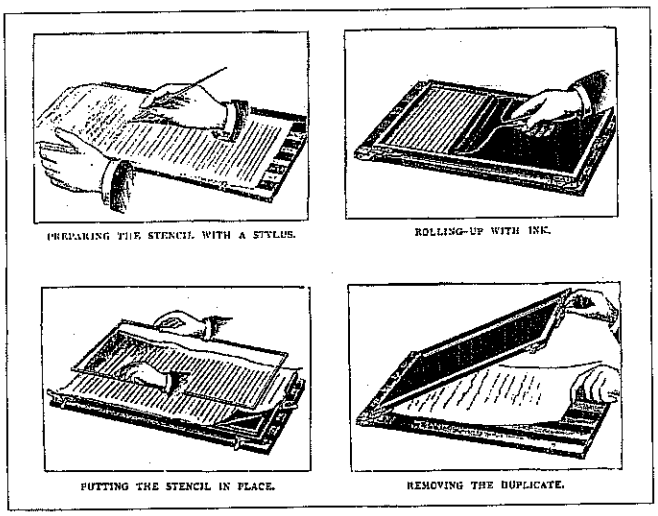
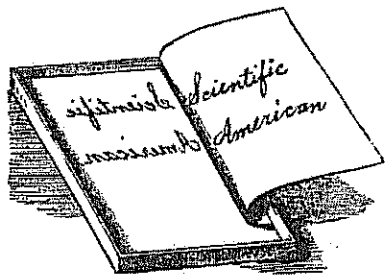


FIG. 6:13. *The process of using the Edison Mimeograph, as illustrated in* The Office, *1887.*

Barbara Rhodes and William Wells Streeter, *Before Photocopying: The Art & History of Mechanical Copying, 1780-1938* (New Castle, DE and Northampton, MA: Oak Knoll Press & Heraldry Bindery, 1999), 164.

Hectographs, or *gelatin duplicators*, which eventually led to *spirit duplicators* like the *Ditto Machine* all involved producing a master page with special ink or carbon paper and using the master to impress additional pages with the original image (the Ditto was famous, especially in schools, for using a purple ink).



STENCIL COPYING TABLET.

FIG. 6:23. *The combination of stencil and hectograph technologies proposed in 1881 in* Scientific American.

Barbara Rhodes and William Wells Streeter, *Before Photocopying: The Art & History of Mechanical Copying, 1780-1938* (New Castle, DE and Northampton, MA: Oak Knoll Press & Heraldry Bindery, 1999), 165.

But all these technologies shared a similar constraint: they each required duplicate copies to be made from freshly created original documents, either manually (with a polygraph), through still-fresh ink (with a copying press), or through the creation of a master sheet (with a Mimeograph or Ditto Machine).

Photography, developed in several countries during the mid-19th century, offered a way to duplicate any image at any time. Photography combined two basic technologies: first, using lenses to project an image (of a landscape, a person, a document) onto a plate and second, using special chemicals attached to that plate that grew darker or lighter in response to light to preserve the projected image. As early as 1839, John Dancer in England attached a microscope lens to his camera and produced a microphotograph—an ordinary image at a reduced size that required a magnifying lens to make it legible again. By the 1850s, it was clear in the United States that microphotography had the potential to produce secure copies of public records like mortgages.[5] Microphotography eventually developed into forms like microfilm (microphotographs on reels of film) and microfiche (microphotographs arranged on index-card sized sheets). These various forms of microphotography are included in the list of technologies permitted to Ohio state offices in §9.01. Still, through the 19th century, while microphotography provided a useful means for storing large quantities of information, producing enlarged copies of their

[5] Frederic Luther, *Microfilm: A History, 1839-1900* (Annapolis, MD: National Microfilm Association, 1959), 23-30.

images effectively required a user to develop the microphotograph film as one would an ordinary film negative.

Which brings us to the Photostat. As mentioned above, Kodak introduced the Photostat in 1911; another company had begun manufacturing the similar Rectigraph in 1906. Both machines used large cameras to produce images directly on special paper, skipping the step of making a negative. As a consequence, rectigraphed images reverse the blacks and whites of their originals—black text on a white background appears as white text on a black one.

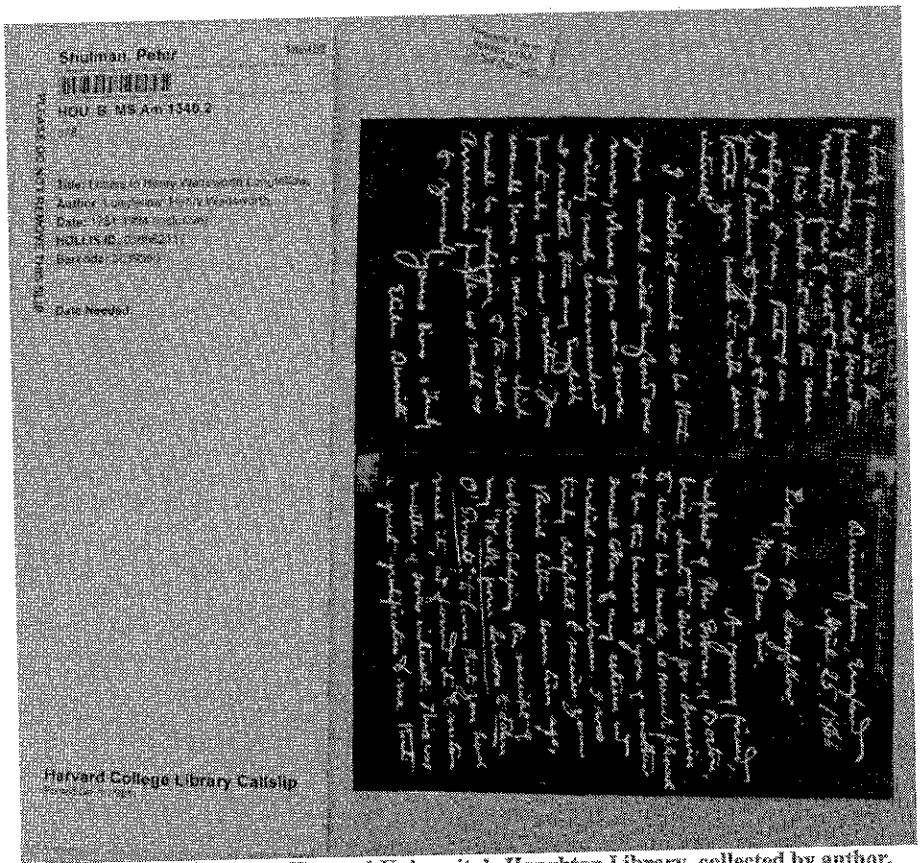
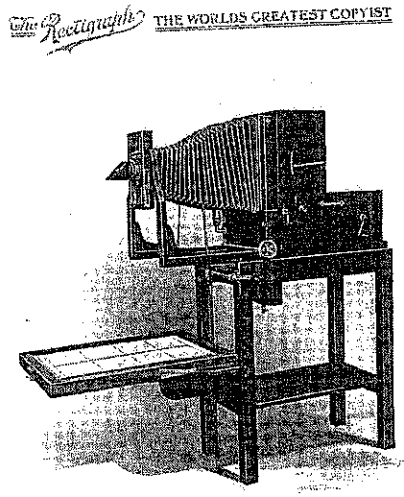


Image of Photostat from Harvard University's Houghton Library, collected by author.

To produce a duplicate with the proper colors, an operator had to run the machines twice, making a second duplicate out of the first, inverted one. These machines were expensive, and ordinary offices typically did not own their own, instead sending out the duplicating work to shops that offered the service.[6] Importantly, as noted by the author of a history of the photocopier, David Owen, when owned in house, Rectigraphs were used primarily by "land record offices, county courthouses, departments of motor vehicles, insurance companies, and other organizations with high-volume record-keeping needs."[7]

[6] David Owen, *Copies in Seconds* (New York: Simon & Schuster, 2004), 79-81.
[7] Owen, *Copies in Seconds*, 122.

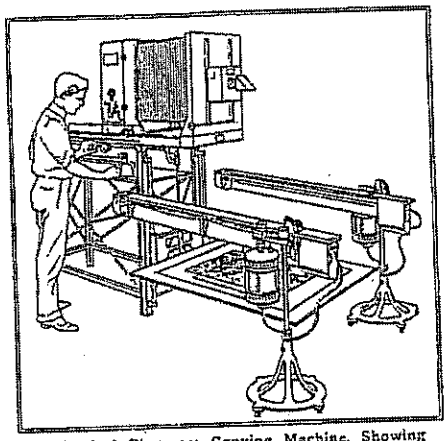
Beginning in the 1920s, recorder offices were also important users of these machines.[8] In all these organizations, Photostat machines allowed the rapid, reliable, and above all accurate copying of important documents.



Early Rectigraph.
XEROX CORP.

From David Owen, *Copies in Seconds* (New York: Simon & Schuster, 2004), 80.

[8] Leonard D. White, "Public Administration, 1928," *The American Political Science Review*, Vol. 23, No. 2 (May, 1929), pp. 440; Milton Conover, "Personal and Miscellaneous," *The American Political Science Review*, Vol. 21, No. 2 (May, 1927), pp. 417; George Clement Havenner, *Photostat Recording* (New York: Municipal Administration Service, 1928).



A Typical Photostat Copying Machine, Showing Lighting Units

FIG. 6:36. *The Photostat, as shown in 1924 in the* American Digest of Business Machines.

Barbara Rhodes and William Wells Streeter, *Before Photocopying: The Art & History of Mechanical Copying, 1780-1938* (New Castle, DE and Northampton, MA: Oak Knoll Press & Heraldry Bindery, 1999), 167.

An account of their use from the decade of their introduction gives a sense of how Photostats were used:

> "Whatever may be the advantages of duplicators dependent upon type, transfer paper, or the stencil, none of these devices can compare with photographic copying when speed and accuracy are the chief essentials. Long and complicated contracts, which may have taken days or even months to perfect, can be copied with absolute accuracy in a few minutes by means of the Photostat. The Commonwealth Edison Company of Chicago cites, as an example, that a contract of six sheets was photographed, developed, washed, dried in an electric drier, and made ready for distribution in 20 minutes. Stenographic copies would have taken hours to make. Moreover, as each stenographic copy required the original signature of seven executives, the additional time spent in bringing each copy before these men was also saved. Either the contracts or the executives would have waited.
>
> "All large insurance companies use the photographic method of copying their policies and one company uses the Photostat for making copies of important records which are too valuable to be trusted out of the record department even for clerical purposes. Two Photostat rooms are maintained. One room is adjacent to the policy division, where a copy of each application (as required by law) is photographically made and attached to the policy. Two cameras here turn out reproductions of 200 applications in less than 90 minutes. Prints are produced directly on

sensitized paper fed from 250-foot rolls. In the course of a year 24 miles of this paper are used for this purpose."[9]

Still, the Photostat had its limitations. It was relatively expensive, for one, requiring specially manufactured sensitized paper, as well as the chemicals for developing film. Second, just like an ordinary film camera, regular operation produced a negative image; rather than a replica of the original image, the Photostat machine turned out an inverted one with black where the original had white and white where the original had black. Still, until the 1950s, they were the best means of producing a high quality duplicate, especially when large volumes of documents needed to be copied and stored.

C. Photocopying

The third term, "photocopying," is more complex, and its meaning has changed over time. When early 20th century books (or statutes) referred to "photocopying," they meant duplicating processes that used photography—principally the Photostat or Rectigraph.[10] By the 1960s, its meaning shifted to refer to a technical process more familiar to us today: xerography.

Anyone who has ever used a modern copy machine since the 1960s has made use of xerography. Xerography, from the Greek *xeros* for "dry" and *graphein* for "writing," dispensed with the special papers and chemicals required by photostats and rectigraphs, as well as those required by the office duplicators that proliferated in the United States in the 1950s with now forgotten names like Thermo-fax, Verifax, and diazo copiers.[11]

The technical process by which a xerographic copier operates can be broken down into a series of steps, most of which depend on a very basic property of matter: static electricity. If you have ever rubbed a balloon on your head and stuck it to a wall, or received (or given) a shock after shuffling your feet on a carpeted floor, you have generated static electricity. Just about all the matter we encounter in the universe is comprised of elementary particles which together form the atoms that are the building blocks of our world. Some of these particles carry an electric charge, like the electron, each of which has one unit of a negative charge. Protons each carry one positive charge. Protons are usually bound deep in the center of atoms and don't move around easily, but some electrons are only loosely bound around atoms, and they can be pushed off. When electricity flows in a wire, it is because electrons are being pushed from one atom comprising the wire to an adjacent atom. Usually, the matter around us is neutrally charged—all the protons and electrons balance each other out. But because electrons can be pushed off some atoms, we can create some matter with a positive charge (stripped of some electrons) or a negative charge (carrying extra electrons). This is the basic of static

[9] Lee Galloway, *Office Management, Its Principles and Practice: Covering Organization, Arrangement, and Operation with Special Consideration of the Employment, Training, and Payment of Office Workers* (New York; The Ronald Press Co., 1919), 82.
[10] Owen, *Copies in Seconds*, 81.
[11] Owen, *Copies in Seconds*, 179-82.

electricity. When lightening strikes, it is because there has been a buildup off too much charge between the earth and clouds. And it is also how xerography works.

The basic principles of xerography were worked out in the late 1930s, and its key originator, Chester Carlson, received his first patent for what he initially called electron photography in 1940.[12] Nevertheless, it took two more decades and an enormous (and expensive) research and development effort to make the process practicable and commercially viable. The process sought to provide, and ultimately succeeded in providing, a near perfect duplication of a document, quickly and on ordinary paper, without the use of chemicals, specially treated paper, or other drawbacks.

The process of electron photography, or xerography, still relies on Carlson's original concept, and is best described in five steps (for a graphical description, see the attached pages from Marshall Brain's *More How Stuff Works*, pages 222-3). First, a special plate is charged with static electricity; that is, it is showered with electrons. Second, once the plate is charged, the document to be copied is placed above it. A bright light shines from behind the document, projecting the image of the document onto the charged plate. Crucially, the charged plate is made of a special material with the property that when it is in the dark, it acts as an electrical insulator—like the rubbery coating on the outside of a copper wire—that prevents a charge from moving. But when the plate is exposed to light, it acts as an electrical conductor, allowing a charge to drain away. In this second step, then, the plate had already been charged (in the dark), but when the light gets turned on, the charge drains *away* from the plate—*except* in the places where the shadow of the ink on the paper was projected. Since these shadows produce dark images on the charged plate, over these the dark images the plate acts as an insulator, and only in those places it keeps its charge.[13]

Third, a special powder—a kind of dry ink called toner—is dusted over the selectively charged plate. The toner is attracted by static electricity only to those parts of the plate that carry a charge. Applied in this way, the toner forms an image of the document to be copied atop the charged plate. Fourth, a blank sheet of paper—the one to receive the duplicated image, is charged by static electricity to a charge that attracts the toner from the charged plate in exactly the same orientation as the original document. Now, the image has been transferred to the new sheet. Fifth, the duplicated document is heated to fuse or melt the toner to the paper, creating a permanent copy. The charged plate is then wiped clean of charge and residual toner and the process is ready to begin again.

Although the materials and controls used have changed since Chester Carlson first came up with the idea in the 1930s and what became the Xerox Corporation first marketed its phenomenally successful Xerox 914 in 1960 (so named because it could handle paper up

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[12] Carlson, Chester. 1940. Electron Photography. U.S. Patent 2,221,776, filed September 8, 1938, and issued November 19, 1940.

[13] This is how the original xerographic copiers worked; modern machines do not shine light *through* the paper to be copied, but shine *at* them, measuring how much light is reflected back (dark spots on the page reflect less light); that image is then projected onto the charged surface. The basic principle is the same, however.

to 9 inches wide and 14 inches long), the basic physical principles of xerography remain the same: one image goes in, and a duplicate of that image comes out. And whether you copy on a Xerox, or a Canon, Lexmark, or Hewlett-Packard, you are making use of xerography.[14] Moreover, the most common kind of office printing technology, the laser printer, is also a xerographic process, except the original image to be produced (printed) does not come from another sheet of paper, but from instructions from an attached computer. The plate charging, partial discharging, dusting with toner, transfer of toner to a new sheet of paper, and fusing the toner are all the same in a laser printer as they are in a xerographic copier (one reason why many companies are today able to market combined printer-copiers).

D. Facsimile Transmission

The final technology mentioned in §317.32 setting Recorders' fees is the facsimile machine, or fax. Like the typewriter and photography, the fax machine dates back to the mid-19th century, when Scottish and French inventors developed machines to transmit an image over a telegraph line by "reading" the image line by line, breaking it down into strips of white and black. Sent over the telegraph line, this signal was reconstituted on the other end by a succession of electromechanical devices. These devices were used in small numbers in Europe and the United States through the middle of the 20th century, but never became widely used because other methods of sending information—by telegraph, telephone, or the mail, remained more than adequate for most uses. Early faxes were most commonly employed by news wire services to transmit photographs, weather stations and national weather services to transmit maps for forecasting, police departments to transmit information on wanted criminals, and large firms like railroads to transmit intra-corporate communications.[15]

The provision in §317.32 for County Recorders to charge fees for fax transmission dates to 1993, when the fee was set at $1 per page for local transmission and $2 per page for long distance transmission, for pages of 8½ by 14 inches.[16] When this provision was passed, what we would now recognize as modern fax machines had already become widespread, first in Japan around 1983, then the United States in the late 1980s, and finally Western Europe after 1992 (Japanese firms first developed this new technology and Japanese offices quickly adopted it in part because the transmission of the 2,000 characters of the written Japanese language is far more efficient when sent graphically

[14] The basic process of xerography is described in many places. See John H. Dessauer and Harold E. Clark, eds., *Xerography and Related Processes* (New York: The Focal Press, 1965); J. Mort, *The Anatomy of Xerography: Its Invention and Evolution* (Jefferson, NC: McFarland & Co., 1989); idem, "Xerography: A Study in Innovation and Economic Competitiveness," *Physics Today* (April, 1994): 32-8; William R. Hawken, *Full-Size Photocopying*, The State of the Library Art, vol. 5, part 3, ed. Ralph R. Shaw (New Brunswick, NJ: Graduate School of Library Service, Rutgers University, 1960), 265-347;

[15] Tim Hunkin, "Just give me the fax," *New Scientist*, **137** (February 13, 1993): 33-7; M.J. Peterson, "The Emergence of a Mass Market for Fax Machines," *Technology in Society* **17**, no. 4 (1995): 469-82; George Mannes, "Delivering the Fax," *American Heritage of Invention & Technology* **14**, no. 4 (Spring, 1999): 40-8.

[16] Am. Sub. H.B. No. 152 (eff. July 1, 1993); 1993 Ohio Legis. Bull. 202.

instead of by each individual character, as, for example, Morse Code could be sent in English.)

For a graphical description of fax machine operation, see the attached pages from Marshall Brain's *More How Stuff Works*, pages 224-5. Modern fax machines work by breaking the text or image on a piece of paper into a series of tiny squares (called pels). In its simplest form, each pel is either black or white, representable as a 1 or a 0, and this information can then be sent over an ordinary telephone line, where a fax machine on the other side reassembles the image and prints it onto another piece of paper. In practice, fax machines find ways to send less information—they "compress" the image—by relying on a variety of techniques that accelerate the transmission process without affecting the quality of the image. The popular machines of the 1980s and 1990s often used rolls of thermal paper—a kind of glossy material that darkens when heated. In these machines, the thermal paper is pulled under a row of heating elements that can be warmed and cooled hundreds of times a second. Machines developed in the 1990s and in use today print on ordinary paper using the same laser printing process found in xerographic copiers and laser printers. Since modern fax signals are "digital"—that is, represented by 1s and 0s, they can also be sent or received directly by computers, though the proliferation of e-mail since the 1990s and the ability to attach digital documents to e-mail messages has made faxing by computer an uncommon activity.

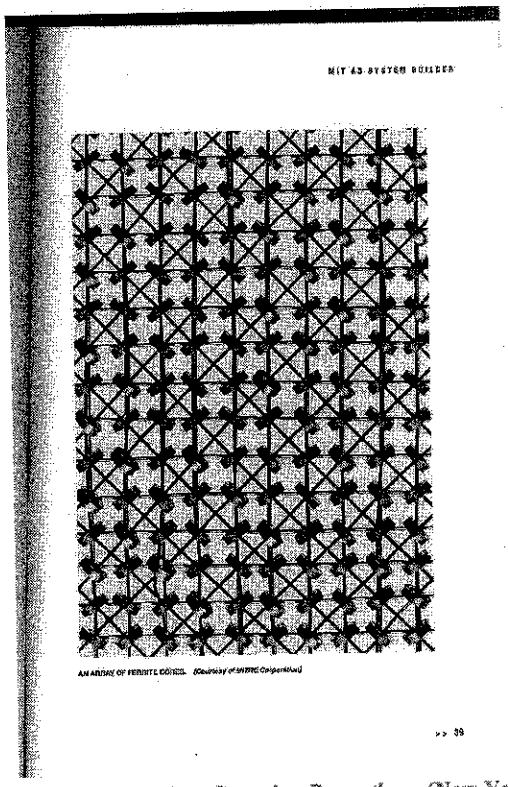
III. The Processes considered together

Taken together, all four of the technologies specified in §317.32—writing by hand or typewriter, photostat, photocopying, and fax transmission, rely on the creation or duplication of individual pieces of paper. The most common of these process, photocopying and fax transmission, as well as printing documents from a computer onto a laser printer, today all rely on essentially the same xerographic technology. Moreover, each of these technologies rely on processes that take place one page of paper at a time. A Photostat must photograph an individual document to be duplicated, one photograph per document. A photocopier must take an image of each individual page being copied and churn out individual pages as output. A fax machine must scan in or print out individual sheets of paper. There are no shortcuts.

A. What about the CD-ROM?

The CD-ROM, an acronym for "Compact Disc—Read Only Memory" (whose expansion probably offers little clarity in what it actually is), is a popular method for storing digital information. The CD-ROM relies on the fact that all computers speak a common language: that of 1s and 0s. Everything a computer today does—word processing, e-mail, shopping from Amazon.com on the Internet's World Wide Web—is all conducted at the most basic level of the machine by 1s and 0s. Every word, image, or command in the computer is actually broken down into a sequence of 1s and 0s—this is what is meant by "digital" technologies (they use the digits 1 and 0). Since the development of the ENIAC computer at the University of Pennsylvania during World War II and the Whirlwind computer at MIT just after the war, both the instructions for how a computer

was to operate, as well as the data upon which it operated, was stored as 1s and 0s. We call this stored data "computer memory," and however abstract computers sometimes feel, this memory has to be stored in some physical form. The Whirlwind machine, for example, pioneered what was called "magnetic core memory," which involved giant arrays of tiny metal donuts, each connected to its neighbors by wires. Each individual donut could be magnetized, or a magnetized donut could be de-magnetized. A magnetized donut represented a number 1, a de-magnetized donut a number 0. A string of donuts, representing some combination of 1s and 0s, could represent a number, word, or instruction. Over the subsequent decades, new techniques—usually faster and smaller ones—were developed for storing a computer's 1s and 0s.[17]



Magnetic core memory, from Thomas P. Hughes, *Rescuing Prometheus* (New York: Pantheon Books, 1998), 39.

A CD-ROM is simply one form of stored memory in the larger class of "optical devices." Optical devices store information—that is, they represent 1s and 0s—in a way that a computer "reads" by shining light on it and detecting how that light is reflected back. On the storage (or bottom) side of the CD-ROM, some process is used to change the material in some way to physically represent a 1 or a 0. One way is to use a laser (a concentrated beam of light of a single wavelength) to burn away a portion of disc. Thus, when the

[17] On the early development of digital computers, see Martin Campbell-Kelly and William Aspray, *Computer: A History of the Information Machine* (New York: Basic Books, 1996); Paul E. Ceruzzi, *A History of Modern Computing* (Cambridge, MA: MIT Press, 1998); Paul E. Edwards, *The Closed World: Computers and the Politics of Discourse in Cold War America* (Cambridge, MA: MIT Press, 1996); and Thomas P. Hughes, *Rescuing Prometheus* (New York: Pantheon Books, 1998).

CD-ROM reader's own laser proceeds to "read" the disc, the burned and unburned portions of the disc are interpreted to mean a 1 or a 0. A second way of making a CD-ROM creates a bubble inside the thin film on the disc; a third way changes the physical structure of the atoms in the disc. In all cases, the CD-ROM represents 1s and 0s in a way that a computer can interpret. (For a graphical description, see the attached pages from Marshall Brain's *More How Stuff Works*, pages 238-9.)

CD-ROMs are effectively no different from audio CDs, which also use 1s and 0s to store a musical signal, where CD-ROMs store any kind of information.[18] An individual CD-ROM is 4.75 inches in diameter, and can hold up to 15 billion bits—15 billion 1s and 0s. This translates into what we might estimate to be some 1,000 books of ordinary length.[19]

Duplicating a CD-ROM simply involves reading the original disc's sequence of 1s and 0s and using another machine to burn that same pattern of 1s and 0s into the duplicate disc. If the data to be burned onto the blank disc is on a computer hard drive instead of an existing CD-ROM, the process simply skips reading an initial disc and proceeds directly to burning the computer's data to the blank disc. (Since an ordinary computer's hard drive today can access data faster than a CD-ROM drive can read a CD-ROM, burning data directly from a computer might often be a faster process.) Whether the initial disc being duplicated contains the representation of 100 pages or 1,000 pages or 100,000 pages makes only a trivial difference in the length of time a computer needs to read, burn, and verify that it burned the duplicate disc correctly.

B. The Trouble with digital "pages"

There is a fundamental difficulty in applying the terminology and units developed for paper-using technologies like Photostats, customary office photocopiers, and fax machines to digital devices like CD-ROMs. When I make a photocopy on a customary office photocopier, I begin with a certain number of pieces of paper of whatever size, and the copier turns out duplicates of those pages, one page at a time. When §317.32 sets a fee for the number of pages photocopied, it reflects that basic unit, the page.

But the "page" is a much more slippery term when we come to the digital world. On the word processor on which I am typing this report, I now see a representation of how many 8½ by 11 inch pages I have written. When I type, I typically set the size of my text, or font, to 12 point (the size at which this text is, in fact, printed) and a size I find easy to read. But when I give presentations, I raise the font size to 14 or 16 point—I make the text appear larger—so that I can read it more easily from a podium. My document that

[18] There are some technical differences between audio CDs and CD-ROMS because of how they are read—audio CDs generally just play forward while a CD-ROM has to be quickly read in different portions of the disc.

[19] Mort, *The Anatomy of Xerography*, 184-5; Nancy L. Eaton, Linda Brew MacDonald, and Mara R. Saule, *CD-ROM and Other Optical Information Systems: Implementation Issues for Libraries* (Phoenix, AZ: Oryx Press, 1989); Ahmed M. Elshami, *CD-ROM Technology for Information Managers* (Chicago: American Library Association, 1990); John A. McCormick, *A Guide to Optical Storage Technology: Using CD-ROM, WORM, Erasable, Digital Paper,™ and Other High-Density Opto-Magnetic Storage Devices* (Homewood, IL: Dow Jones-Irwin, 1990).

was once 10 "pages" has suddenly become 13 or 16. If I were to print this larger document using my laser printer, I would need the additional paper and toner to account for its increased length. But from the perspective of the computer, I haven't actually changed the size of anything. The 1s and 0s that represent my text have not changed, I have only changed the piece of information attached to my word processing document that tells the computer the size at which I want this text to appear. (That is to say, the computer does not store a 10 point "A" differently than a 24 point "A"—it does not take more space to store the larger point size—the computer simply stores that I have written "A" and then separately stores a bit of data specifying the point size to display that "A" on the screen.) Were I to burn this document onto a CD-ROM at a miniscule 8 point font size and a gargantuan 72 point font size, it would probably take an identical or nearly identical number of 1s and 0s to represent these documents. This is because the computer doesn't think in terms of pages, but 1s and 0s.[20] And when it comes to CD-ROMs, each of its 15 billion bits—each of its 15 billion 1s and 0s has to be checked when creating a new disc.

C. Paying for printing

It is probably clear by now why it makes sense for a County Recorder to charge a fee for photocopying, faxing, or printing (via a laser printer) documents. Nowadays, each of these processes relies on using xerographic methods to turn out physical pages. I do not know why the State of Ohio set the fees in §317.32 as it has, but it is clear that each of the processes mentioned involve producing paper, which entails a certain cost.

Moreover, since the fee for copying pages as set by §317.32 remained at $1 per 8½ by 14 inch page between 1959 and 2003 (when it was doubled to $2 per page), during which time the costs of photocopy machines plummeted while their speed and quality increased, we might infer that this fee has roughly reflected the falling costs of duplication (as in 2010 dollars, $1 in 1959 is about $7.39). And indeed, the Xerox 914 retailed for about $30,000 in 1963—about $211,000 in 2010 dollars. Today, you can buy a top of the line Xerox copier—that also prints, scans, and e-mails, for $46,900.[21]

Duplicating a CD-ROM is fundamentally unlike these printing processes. No paper is involved. "Pages" are simply conventions that can be easily manipulated on the computer to squeeze more images per sheet or reduce or enlarge the size of the font employed. In creating a CD-ROM, it takes a CD burner more or less the same amount of time and supplies (that is, one blank, recordable CD-ROM) to burn a disc with the representation of a ten page document as one with the representation of a 10,000 page document, and the same amount of labor by the computer operator. And while a photocopier, fax machine, or laser printer turns out a single page at a time, the basic unit

[20] Out of curiosity, I just saved copies of this document I am drafting at the regular 12 point font, the maximum 72 point font, and the minimum 8 point font. The basic 12 point document takes up 156 kilobytes (or 156,000 bytes, where each byte equals 8 bits). The 72 point version, for some reason, only takes up 88 kilobytes—it takes the computer *less* memory to store a document that appears to be 395 "pages" instead of 12. The 8 point version takes up 160 kilobytes—the largest of the three.
[21] http://www.office.xerox.com/copiers/enus.html, accessed 5/12/2011.

of copying for a CD-ROM is the entire set of digital data to be burned. When my computer asks me to confirm that I wish to burn a new CD-ROM, it informs me only what the total size of data to be burned it (probably in megabytes, or millions of bytes).

To get a sense of what these different units of copying really mean, consider the time involved for duplicating equivalent numbers of pages by a modern office photocopier and a modern CD-ROM burner. To make a rough comparison, if a County Recorder's office receives about 1,000 documents each day, and each document averages three pages apiece, that's a total of 3,000 pages per day. Going by the specifications offered on Xerox's webpage for the Xerox model 4595 I mentioned above, if I wanted to duplicate 3,000 pages, I would have to insert the stack in batches into the document's scanning feeder. The website states that this feeder can scan in 100 images per minute. I would have to stand by (as no document feeder can handle 3,000 pages all at once) and in appropriately sized batches, insert these documents into the machine. At 100 images per minute (assuming the pages are only printed on one side), scanning would take about 30 minutes (assuming no paper getting stuck in the machine) and constant maintenance to ensure already scanned pages are removed and pages to be scanned are properly inserted. (It would actually take a few minutes longer, as the machine can only print 95 pages per minute, while it can scan in 100 page per minute.)

Compare that process with burning a CD-ROM of those same images. I went to the Cuyahoga County Recorder's website and downloaded some random documents. One two page document was 2,081 kilobytes (thousand bytes) and one sixteen page document was 16,627 kilobytes. Per page, this gives us 1,040 kilobytes. At 1,040 kilobytes per page, 3,000 pages gives us a total of 3,120,000 kilobytes, or 3,046 megabytes. It might take somewhere between 4-6 ordinary recordable CD-ROMs (the kind common since the 1980s) to hold that data, but a now-standard recordable DVD (new computers come with such burners standard, and these discs are both widely available and operate on the same optical principles as a CD-ROM), can easily hold this amount of data on a single disc.

I use an Apple Macintosh computer. Apple's website lists a new model Macbook Pro (the updated version of my three-year-old model) as having a CD/DVD drive that can burn a DVD at a rate of 8x standard speed.[22] This is a bit technical, but since a standard speed for a DVD burner is 1.32 Megabytes per second, an 8x speed burning rate would be 10.56 Megabytes per second. If we have to burn 3,046 Megabytes (from our 3,000 digitized pages), that would take our DVD burner 288 seconds, or just under 5 minutes. Of course, the actual speeds of DVD burners are a bit slower than what they list as, but I simply chose a standard model burner. DVD burners exist that operate at twice that rate. The bottom line is that 3,000 pages photocopied would take a minimum of 30 minutes in a top of the line photocopier, but fewer than 5 minutes in a DVD burner. In addition, the documents copied on the photocopier would have to be marked in some way to indicate where one document ends and another one begins; in the digital form, these documents are already separated as files.

[22] http://www.apple.com/macbookpro/specs.html, accessed May 13, 2011.

One more item worth noting that §317.32 does use a unit for assessing duplication fees that is not the standard 8½ by 14 inch sheet of paper. In the second paragraph of subsection (K), the statute notes that the fee for photostats "for recording maps, plats, or prints" is based not per page, but per square inch. These documents vary widely in size, and here, the area duplicated serves as a more convenient unit for setting a fee. I point this out to note that the statute recognizes that different technologies that employ different units require different ways to measure appropriate fees.

To treat now-ubiquitous digital technology with the norms developed for older, paper-based technologies undercuts the very advantages that digital technologies offer—their speed, replicability, cheapness, and ability to handle vast quantities of data in a manageable way.

IV. A Historian's View

If I might make one final observation, I would like to state that as an academic historian, I am dependent on the availability of archival records. Some kinds of records have long been preserved and are widely recognized as important, like diplomatic correspondence. But as historians develop new questions and new tools for sifting through historical evidence, we find other types of records immensely valuable. The problem is that we cannot know in advance what kinds of records might be useful in the future, but if such records are available, we have to have access to them in order to use them.

This case is about the ability of private corporations to access public records. But County Recorder records could be of use to many people. Historians could use them to reconstruct changes in communities over time, economists could use them to track the effects of the recent economic crisis that began in 2008, and scholars investigating poverty could use them to explore patterns in land ownership and housing. The fact that these records are now available digitally means scholars can use new tools to sift through them to understand the contemporary world. These tools are useless if that data is locked up at exorbitant costs.

When Thomas Jefferson, a passionate protector of public documents, learned of a historian's heroic effort to collect and publish the fast disappearing papers of the United Colonies of New England, he read the work and wrote the man. "Time and accident are committing daily havoc on the originals [original documents, that is] deposited in our public offices," Jefferson observed. "The late war [the Revolution] has done the work of centuries in this business. The lost cannot be recovered; but let us save what remains: not by vaults and locks which fence them from the public eye and use, in consigning them to the waste of time, but by such multiplication of copies, as shall place them beyond the reach of accident." This was in 1791.[23]

[23] Silvio Bedini, *Thomas Jefferson and His Copying Machines* (Charlottesville, VA: University Press of Virginia, 1984), 2-3.

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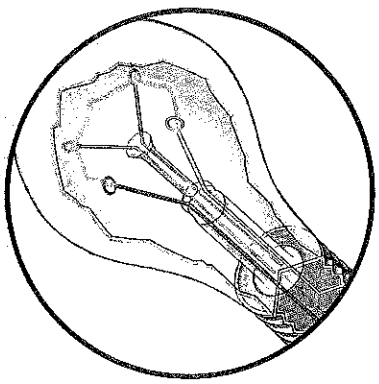

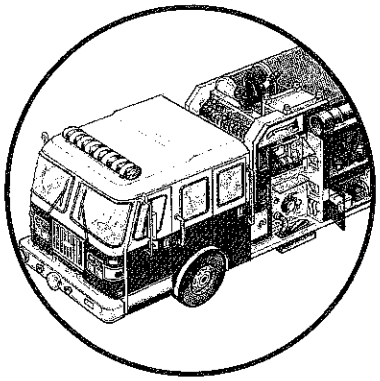

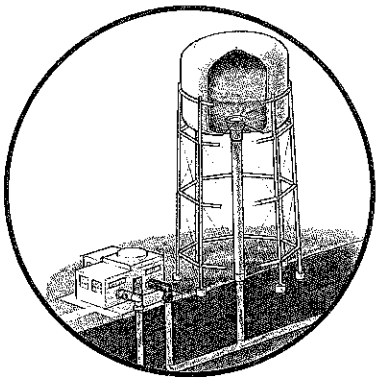

Marshall Brain

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- How Van de Graaff Generators Work
- How Lasers Work

What if you had to resort to making carbon copies of important documents, as many people did before copiers came along? Or worse, imagine how tedious it would be if you had to recopy everything by hand! Most of us don't think about what's going on inside a copier while we wait for copies to shoot neatly out into the paper tray, but it's pretty amazing to think that, in mere seconds, you can produce an exact replica of what's on a sheet of paper!

The Basic Principles of Photocopying

The human part of making a copy begins with a few basic steps:

1) Open the copier lid.
2) Place the document to be photocopied face-down on the glass.
3) Select the options you want (number of pages, enlargements, lighter/darker).
4) Press the start button.

What happens inside the copier at this point is amazing. At its heart, a copier works because of one basic physical principle: Opposite charges attract.

As a kid, you probably played with static electricity and balloons. On a dry winter day, you can rub a balloon on your sweater and build up enough static electricity in the balloon to create a noticeable force. For example, a balloon charged with static electricity will attract small bits of paper or particles of sugar very easily. A photocopier is a machine that puts the forces of static electricity to good use.

Inside a copier there is a special drum. The drum acts a lot like a balloon—you can charge it with a form of static electricity. Inside the copier there is also a very fine black powder known as *toner*. The drum, once it's charged with static electricity, can attract the toner particles. Three things about the drum and the toner let a copier perform its magic:

- The drum can be selectively charged, so that only parts of it attract toner.
- The toner is heat sensitive, so the loose toner particles are attached (fused) to the paper with heat as soon as they come off the drum.
- The drum, or belt, is made out of photoconductive material.

The copier makes an image—in static electricity—on the surface of the drum. Where the original sheet of paper is black, static electricity is created on the drum. Where it's white, no static electricity is created. What you want is for the white areas of the original sheet of paper to NOT attract toner. The way this selectivity is accomplished in a copier is with light—the *photo* in *photocopier* is from the ancient Greek word for light!

Inside a Photocopier

If you take a photocopier apart, you might be overwhelmed by how many different parts there are. The actual photocopying process relies on only a few key pieces:

- **Photoreceptor drum or belt**—A drum is basically a metal roller that's covered by a layer of photoconductive material that's made out of a semiconductor such as selenium, germanium, or silicon.
- **Corona wires**—These wires carry a high voltage, which they transfer to the drum and paper in the form of static electricity.
- **Lamp and lenses**—Photocopiers use a plain old incandescent or fluorescent bulb to flash light onto the original document. A mirror attached to the lamp assembly directs reflected light through a lens onto the rotating drum below.
- **Toner**—Toner is a fine, negatively charged, plastic-based powder.
- **Fuser**—The fuser melts and presses the toner image onto the paper.

Putting It All Together

For the photocopier to work its magic, the surface of the photoconductive material must first be coated with a layer of positive charge by the corona wire. When you hit the start button, a strong lamp casts light onto the paper you're copying and the drum starts to rotate. As light reflects off the white areas of the paper, mirrors direct it onto the drum surface. Like dark clothing on a hot sunny day, the dark areas of the original absorb the light, and the corresponding areas on the drum's surface are not illuminated.

In the places that light strikes the rotating drum, the energy of the photons kicks electrons away from the photoconductive atoms.

Opposite charges attract, so the positively charged ions coating the photoconductive layer attract the freed electrons. The marriage of one ion and one electron produces a neutral particle. Charged particles remain only in places where light didn't hit the drum because it wasn't reflected from the original—the dark spaces taken up by text and pictures on the page!

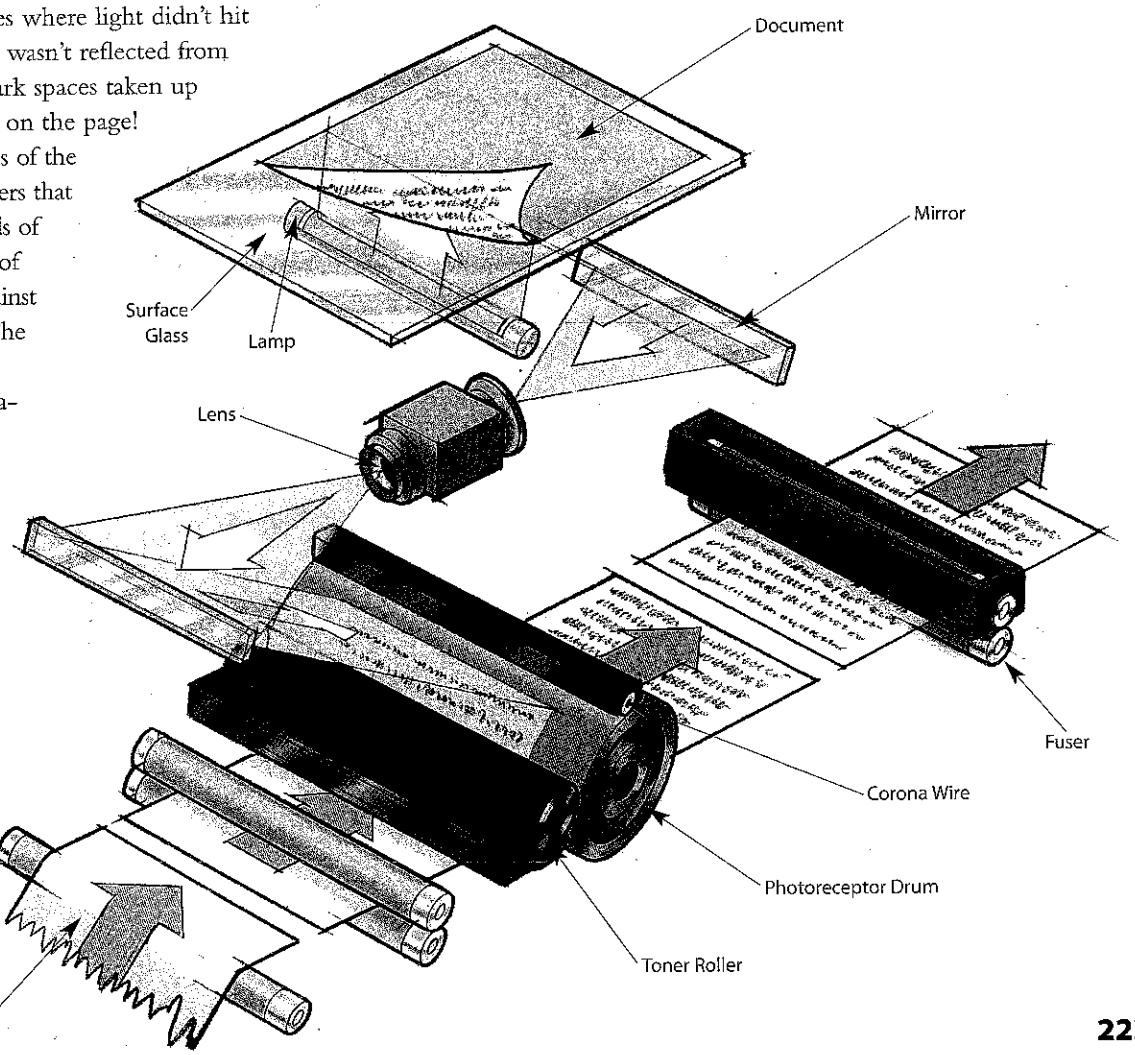
The exposed areas of the drum rotate past rollers that are coated with beads of toner. Tiny particles of toner are pressed against the drum's surface. The plastic-based toner particles have a negative charge and are attracted to the areas of positive charge that remain on the drum's surface.

The corona wire passes over a sheet of paper so that the paper's surface becomes electrically charged.

The area of the drum that's been freshly coated with toner spins into contact with a positively charged sheet of paper. The electric field surrounding the paper exerts a stronger pull than the ions coating the drum's surface, and so the toner particles stick to the paper as the drum passes by.

To fix the toner image in place on the paper's surface, the entire sheet rolls through the fuser's heated rollers. The heat melts the plastic material in the toner and fuses the pigment to the page.

By the time you reach for your copy in the collection tray, the photocopier has already prepared for the next go-round by again cleaning off the drum's surface and applying a fresh coat of positively charged ions to it.



How FAX MACHINES Work

Walk into nearly any office in the United States today, big or small, high-tech or low-tech, and you will find a fax machine. Once connected to a normal phone line, a fax machine allows you to transmit pieces of paper to someone else—almost instantly! Even with FedEx and e-mail, it is nearly impossible to do business without one of these machines today.

HSW Web Links

www.howstuffworks.com

How Modems Work
How Telephones Work
How Photocopiers Work
How Scanners Work
How Inkjet Printers Work
How Laser Printers Work

Although fax machines didn't become widespread until the late 1980s, they've been around in one form or another for over a century (the first patent on a fax process was in 1843). If you look back at some of the early designs, you can get a very good idea of how they work today.

Most of the early fax machine designs involved a rotating drum. To send a fax, you would attach the piece of paper to the drum with the printed side facing outward. The rest of the machine worked something like this:

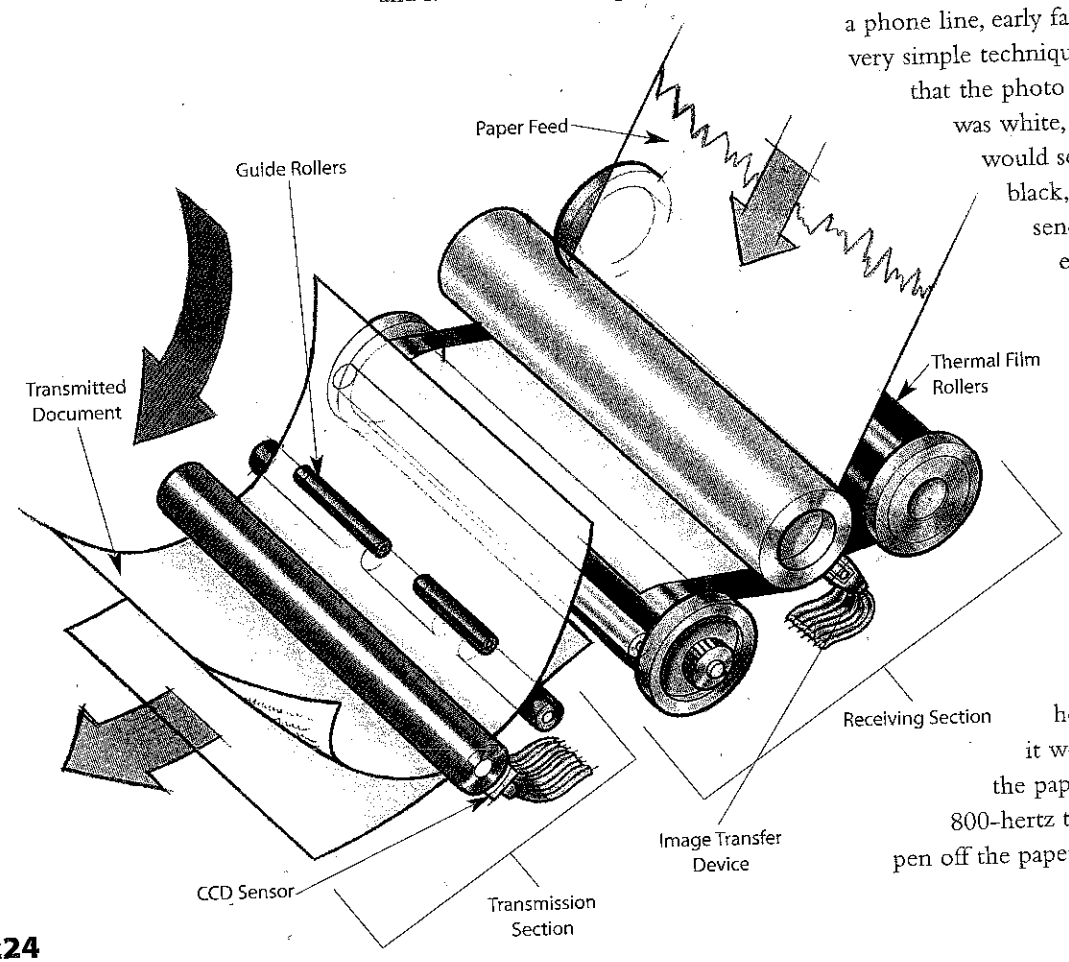
- There was a small photo sensor with a lens and a light.
- The photo sensor was attached to an arm and faced the sheet of paper.
- The arm could move downward over the sheet of paper from one end to the other as the sheet rotated on the drum.

In other words, an early fax machine worked something like a lathe, with the photosensor on the lathe's arm.

The photo sensor was able to focus in and look at a very small spot on the piece of paper—perhaps an area of 0.01 inches square (0.25 millimeters square). That little patch of paper would be either black or white. The drum would rotate so that the photo sensor could examine one line of the sheet of paper and then move down a line. It did this either in steps or in a very long spiral.

To transmit the information through a phone line, early fax machines used a very simple technique: If the spot of paper that the photo cell was looking at was white, the fax machine would send one tone; if it was black, the machine would send a different tone. For example, the fax might have sent an 800-hertz tone for white and a 1,300-hertz tone for black.

At the receiving end, there would be a similar rotating drum mechanism and some sort of pen to mark on the paper. When the receiving fax machine heard a 1,300-hertz tone it would apply the pen to the paper, and when it heard an 800-hertz tone it would take the pen off the paper.



Modern Fax Machines

A modern fax machine does not have the rotating drums and is a lot faster, but it uses the same basic mechanics to get the job done.

At the sending end, some sort of sensor reads the paper. A modern fax machine also usually has a paper-feed mechanism so that it is easy to send multi-page faxes. There is some standard way to encode the white and black spots that the fax machine sees on the paper so that the fax can send information that travels through a phone line.

At the receiving end, there is a mechanism that marks the paper with black dots.

A typical fax machine that you find in an office is officially known as a *CCITT* or *ITU-T (standardized organization) Group 3 Facsimile machine.* The Group 3 designation tells you four things about the fax machine:

- It will be able to communicate with any other Group 3 machine.
- It has a horizontal resolution of 203 pixels per inch (8 pixels/mm).
- It has two different vertical resolutions:
  - Standard: 98 lines per inch (3.85 lines/mm)
  - Fine: 196 lines per inch (7.7 lines/mm) (There is also a super fine resolution. It's not officially a Group 3 standard, but it's fairly common, and is 391 lines per inch (15.4 lines/mm)
- It can transmit at a maximum data rate of 14,400 bits per second (bps), and will usually fall back to 12,000 bps, 9,600 bps, 7,200 bps, 4,800 bps, or 2,400 bps if there is a lot of noise on the line.

The fax machine typically has a CCD (charge coupled device) or photodiode sensing array. It contains 1,728 sensors, 203 pixels per inch, so it can scan an entire line of the document at one time. The paper is lit by a small fluorescent tube so that the sensor has a clear view. The image sensor looks for black or white. Therefore, a single line of the document can be represented in 1,728 bits. In standard mode, there are 1,145 lines to the document. The total document size is:

1,728 pixels per line × 1,145 lines = approximately 2,000,000 bits of information.

To reduce the number of bits that have to be transmitted, Group 3 fax machines use three different compression techniques:

- Modified Huffman (MH)
- Modified Read (MR)
- Modified Modified Read (MMR)

The basic idea in these schemes is to look for a run of same-color bits. For example, if a line on the page is all white, the modem can transmit a dozen or so bits rather than the full 1,728 bits scanned for the line. This sort of compression can cut transmission time by a factor of at least two, and for many documents much more. A document containing a significant amount of white space can transmit in just a few seconds.

Receiving the Fax

The bits for the scanned document travel through the phone line and arrive at a receiving fax machine. The bits are decoded, uncompressed, and reassembled into the scanned lines of the original document. There are five common ways to print the fax, depending on the type of machine that receives it:

- **Thermal paper**—When fax machines started infiltrating offices en masse in the 1980s, most of them used thermal paper. The paper is coated with chemicals that react to heat by turning black.
- **Thermal film**—Thermal film uses a page-width ribbon that contains ink that melts onto paper when heated. This is more complicated mechanically than thermal paper, but less complicated than an inkjet.
- **Inkjet**—This technique uses the same mechanism as an inkjet printer.
- **Laser printer**—This technique uses the same mechanism as a laser printer.
- **Computer printer**—The fax is actually received by a fax modem (a modem that understands the Group 3 data standards), stored on the computer's hard disk as a graphics file, and then sent to the computer's usual printer.

How CD BURNERS Work

Up until the mid 1990s, only professionals and the occasional music enthusiast had the equipment to produce CDs. Today, CD burners are standard equipment on new computers, and blank CDs cost less than a dollar. Just about anybody can start burning their own music mixes or backing up computer data at minimal expense. CDs are already edging out cassettes as the standard home-recording medium.

HSW Web Links

www.howstuffworks.com

- How CDs Work
- How Analog-Digital Recording Works
- How DVDs and DVD Players Work
- How Removable Storage Works
- How Speakers Work

CDs store music and other files in digital form. That is, the information on the disc is represented by a series of 1s and 0s. In conventional CDs, these 1s and 0s are represented by millions of tiny bumps and flat areas on the disc's reflective surface. The bumps and flats are arranged in a continuous spiral track that measures about 0.5 microns (millionths of a meter) across and 3.5 miles (5 km) long.

To read this information, the CD player passes a laser beam over the track. When the laser passes over a flat area in the track, the beam is reflected directly to an optical sensor on the laser assembly. The CD player interprets this as a 1. When the beam passes over a bump, the light is scattered away from the optical sensor. The CD player recognizes this as a 0.

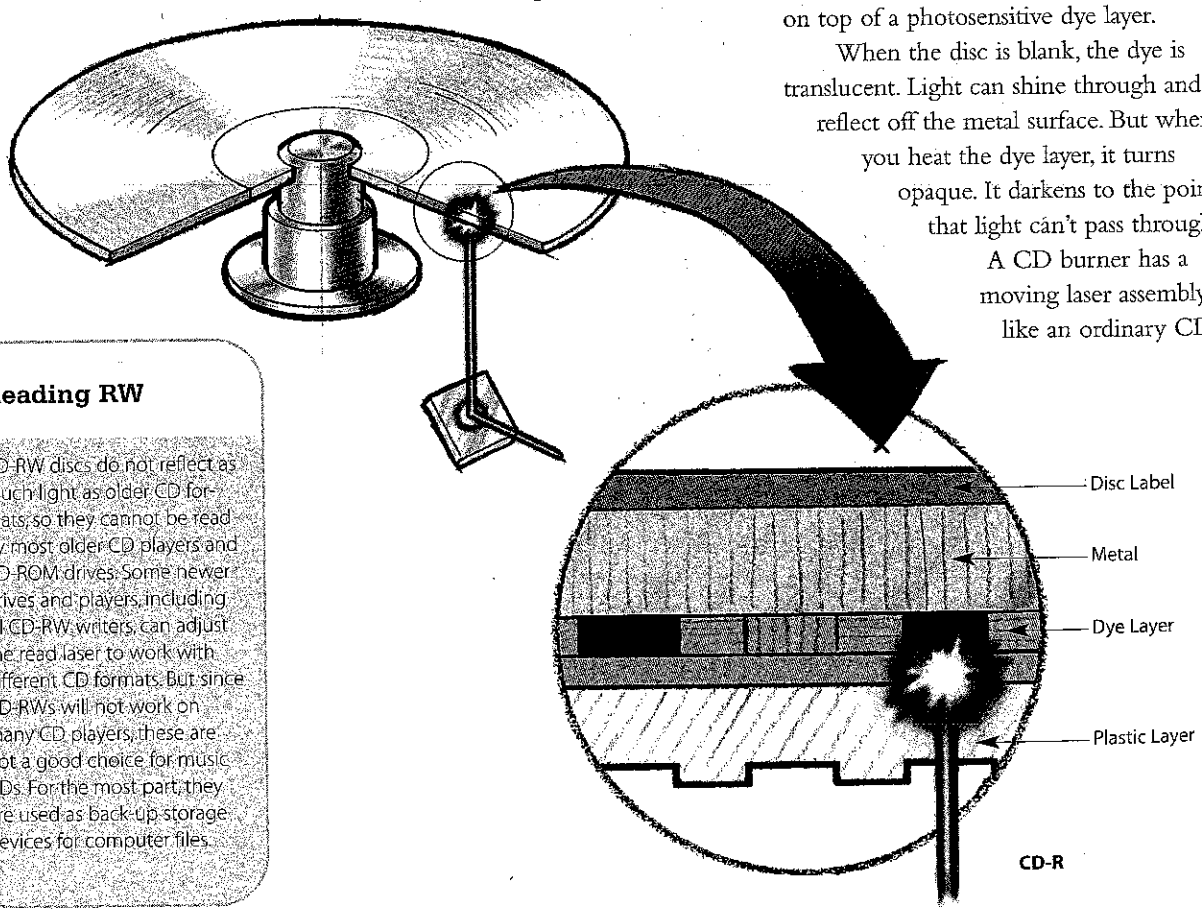
To produce these CDs, manufacturers create a mold of the bump pattern and press the mold into the blank CDs' acrylic surface. The process is cost-effective if you're producing millions of copies of the same CD, but it isn't practical for the casual consumer. Home CD burners come at the problem from a completely different angle.

Feel the Burn

A CD-recordable disc, or CD-R, doesn't have any bumps or flat areas at all. Instead, it has a smooth reflective metal layer that sits on top of a photosensitive dye layer.

When the disc is blank, the dye is translucent. Light can shine through and reflect off the metal surface. But when you heat the dye layer, it turns opaque. It darkens to the point that light can't pass through.

A CD burner has a moving laser assembly, just like an ordinary CD



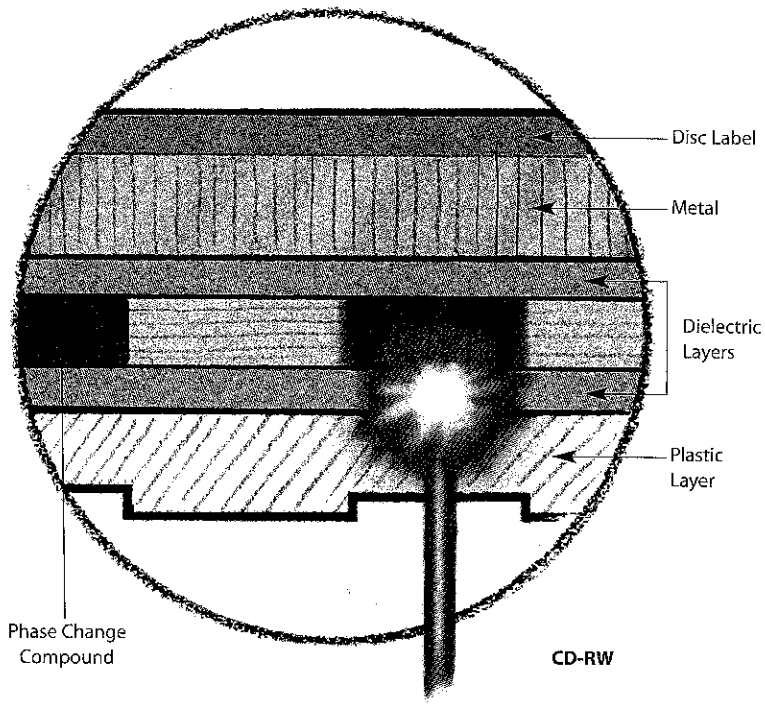
Reading RW

CD-RW discs do not reflect as much light as older CD formats, so they cannot be read by most older CD players and CD-ROM drives. Some newer drives and players, including all CD-RW writers, can adjust the read laser to work with different CD formats. But since CD-RWs will not work on many CD players, these are not a good choice for music CDs. For the most part, they are used as back-up storage devices for computer files.

player. But in addition to the standard read laser, it has a write laser. The write laser is intense enough to darken the dye layer.

The burner moves the laser outward while the disc spins. The bottom plastic layer has grooves pre-pressed into it to guide the laser along the correct path. By calibrating the rate of spin with the movement of the laser assembly, the burner keeps the laser running along the track at a constant rate of speed. To record the data, the burner simply turns the laser writer on and off in sync with the pattern of 1s and 0s. The laser darkens the material to encode a 0 and leaves it translucent to encode a 1.

By selectively darkening particular points along the CD track and leaving other areas of dye translucent, a burner can create a digital pattern that a standard CD player can read. The light from the player's laser beam will only bounce back to the sensor when the dye is left translucent, in the same way that it will only bounce back from the flat areas of a conventional CD. So, even though the CD-R disc doesn't have any bumps pressed into it at all, it behaves just like a standard disc.



Laser Eraser

Unlike tapes, floppy disks, and many other data-storage mediums, you cannot re-record on a CD-R disc once you've filled it up.

CD-RW discs, however, have taken the idea of writable CDs a step further, building in an erase function so that you can record over old data you don't need anymore. These discs are based on phase-change technology.

In CD-RW discs, the phase-change element is a chemical compound of silver, antimony, tellurium, and indium. You can change this compound's form by heating it to certain temperatures.

The crystalline form of the compound is translucent while the amorphous fluid form absorbs most light. On a new, blank CD, all of the material in the writable area is in the crystalline form, so light will shine through this layer to the reflective metal above and bounce back to the light sensor. To encode information on the disc, the CD burner uses its write laser, which is powerful enough to heat the compound to its melting temperature. To encode a 0 on the disc, the write laser heats the compound so it melts. The erase laser is hot enough to return the compound to its crystalline state, effectively erasing any 0s.

Just like conventional CDs, CD-Rs and CD-RWs can store any kind of digital information. But in order to make the information accessible to other CD drives and players, the data has to be arranged in a particular sequence. Burner programs encode data into standard formats, so any player can recognize it.

Trailer Track

CD-Rs and CD-RWs have a component that ordinary music CDs do not have—an extra bit of track at the beginning of the CD, before time zero (00:00), which is the starting point recognized by CD players. This additional track space includes the power memory area (PMA) and the power calibration area (PCA). The PMA stores a temporary table of contents for the individual packets on a disc that has been only partially recorded. When you complete the disc, the burner uses this information to create the final table of contents.

The PCA is a sort of testing ground for the CD burner. In order to ensure that the write laser is set at the right level, the burner will make a series of test marks along the PCA section of track. The burner will then read over these marks, checking for the intensity of reflection in marked areas as compared to unmarked areas. Based on this information, the burner determines the optimum laser setting for writing onto the disc.

How **SCANNERS** Work

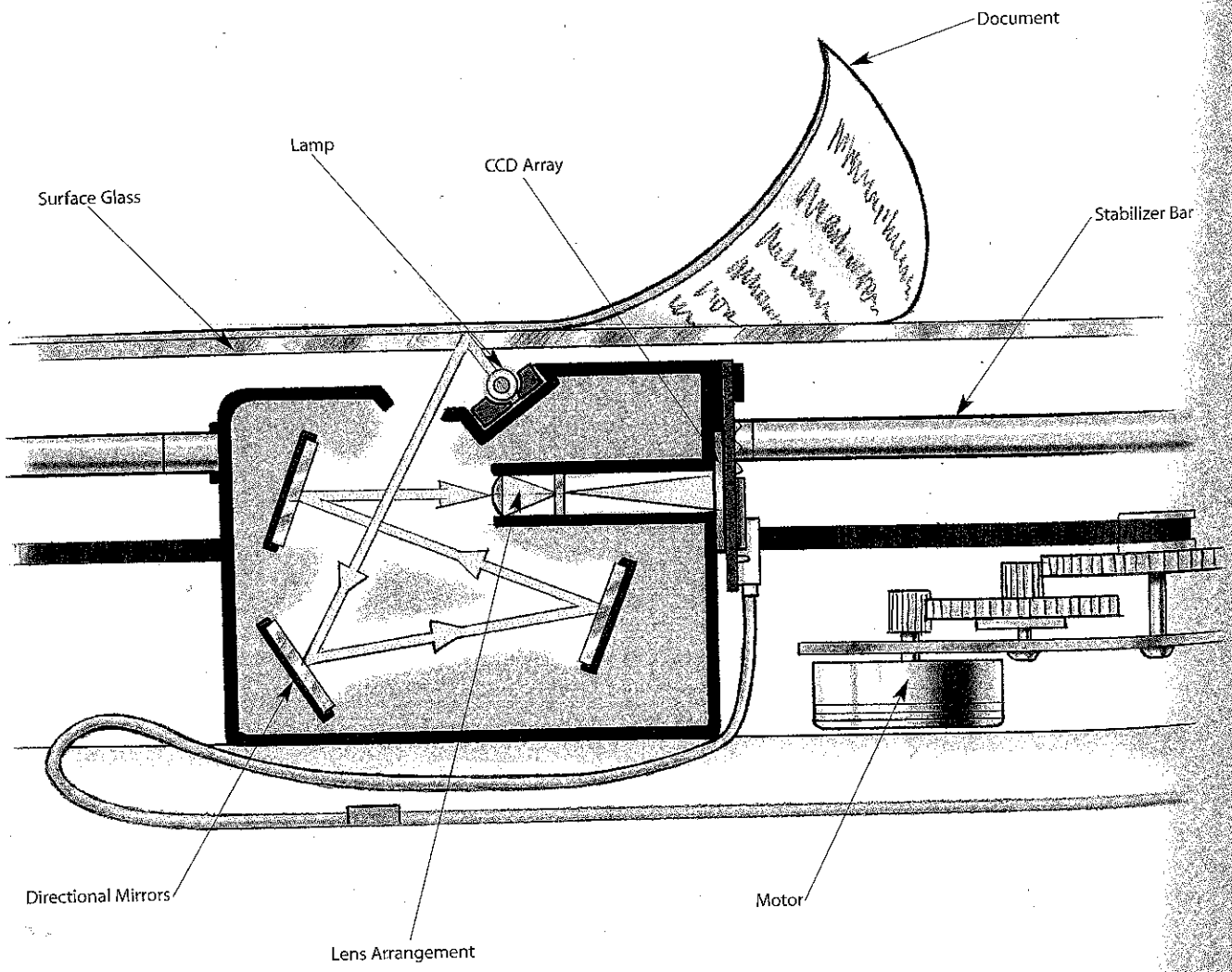
Scanners have become an important part of the office over the last few years. Whether you're scanning documents or photos, a scanner gives you an easy way to move an image into your computer so that you can manipulate it or email it to someone else.

HSW Web Links

www.howstuffworks.com

- How USB (Universal Serial Bus) Ports Work
- How Parallel Ports Work
- How Photocopiers Work
- How Digital Cameras Work

If you think about it, there's no real difference between a scanner and a digital camera. Both devices take a picture and store it as an electronic file. They simply accomplish that in different ways. A digital camera takes a picture of the 3-D world in an instant, and normally does so at fairly low resolution. A scanner creates an image of a 2-D object, like a sheet of paper or a photograph, and can do so at very high resolution. Depending on the resolution, a scanner might take up to a minute to form the image. The resolution of high-end scanners can be startling. A single square inch of a scanner photograph can have as much detail as the entire image from most digital cameras.



Anatomy of a Scanner

The core component of any scanner is a linear CCD (charge coupled device) array that captures the image. A CCD is a collection of tiny light-sensitive diodes, which convert photons (light) into electrons (electrical charge). These diodes are called *photosites.* Each photosite is sensitive to light—the brighter the light that hits a single photosite, the greater the electrical charge that accumulates at that site. The number of photosites on the CCD controls the horizontal resolution of the scanner.

The image of the document that you scan reaches the CCD array through a series of mirrors, filters, and lenses. The exact configuration of these components depends on the model of the scanner, but the basics are pretty much the same.

Scanning

After you place a document on the glass plate and close the cover, a lamp illuminates the document. The lamp in newer scanners is either a cold cathode fluorescent lamp (CCFL) or a xenon lamp, while older scanners may have a standard fluorescent lamp (see "How Fluorescent Lamps Work" for more information).

The scan head (composed of mirrors, the lens, the filter, and the CCD array) moves slowly across the document—a belt that is attached to a stepper motor controls the motion. The scan head is attached to a stabilizer bar to ensure that there's no wobble or deviation in the pass (a single complete scan of the document). An angled mirror reflects the image of the document to another mirror. In some scanners, there are only two mirrors, while others use a three-mirror approach. Each mirror is slightly curved to focus the image it reflects onto a smaller surface. The last mirror reflects the image onto a lens. The lens focuses the image through a filter onto the CCD array.

The filter-and-lens arrangements vary based on the scanner. Some scanners use a three-pass scanning method. Each pass uses a different color filter (red, green, or blue) between the lens and CCD array. After the three passes are completed, the scanner software assembles the three filtered images into a single full-color image.

Most scanners today use the single-pass method. The lens splits the image into three smaller versions of the original. Each smaller version passes through a color filter (either red, green, or blue) onto a different section of the CCD array. The scanner combines the data from the three parts of the CCD array into a single full-color image.

If the scanner has a 600 dot-per-inch resolution, then the CCD array will have 5,100 photosites. The stepper motor is able to move the scan head in 1/600th of an inch increments. Many high-end scanners today have resolutions exceeding 2,000 dots per inch.

Never the TWAIN Shall Meet

Scanning the document is only one part of the process. For the scanned image to be useful, it must be transferred to your computer. There are three common connections used by scanners:

- Parallel port
- Small computer system interface (SCSI)
- Universal Serial Bus (USB)

On your computer, you need to have software, called a *driver,* that knows how to communicate with the scanner. Most scanners speak a common language, TWAIN. The TWAIN driver acts as an interpreter between any application that supports the TWAIN standard and the scanner. This means that the application doesn't need to know the specific details of the scanner in order to access the scanner directly. For example, you can choose to acquire an image from the scanner from Adobe Photoshop because Photoshop supports the TWAIN standard.

The great thing about scanner technology today is that you can get exactly what you need. You can find a decent scanner with good software for less than $100 or a fantastic scanner with incredible software for less than $1,000. It all depends on your needs and budget.

Did You Know?

TWAIN is not an acronym. It actually comes from the phrase "Never the twain shall meet," because the driver is the go-between for the software and the scanner. Because computer people feel a need to make an acronym out of every term, TWAIN is known as *Technology Without An Interesting Name!*

STATE OF OHIO)
) **ss: Affidavit Of *Kathy Idsvoog***
COUNTY OF HAMILTON)

I, *Kathy Idsvoog*, being duly sworn, state as follows based upon my personal knowledge.

1. During April, 2011, I visited the Cuyahoga County Recorder's website on my home computer with high-speed internet connection. The website address is http://recorder.cuyahogacounty.us. Using the "Search Database" link on the recorder's website, I searched for all instruments recorded in Cuyahoga County on August 4, 2010. My search yielded a list of 571 recorded deeds and other records.

2. Following the steps necessary to view and download a recorded instrument on the recorder's website, I proceeded to view and download the first 50 recorded instruments listed in the search result without interruption. I took a short break and then viewed and downloaded the next 50 recorded instruments that were in the search result.

3. To download each one, the recorder's website required me to first enter a unique security code containing a list of distorted characters, such as "L R Z 4," before I could view the deed and download it. I had to enter a different code for each record that I viewed and downloaded.

4. Using a digital timer, I timed how long it took me from start to finish to download one copy of each of the first 100 instruments recorded on August 4, 2010. It took me 1 hour, 9 minutes to view and download the first 50 records. It took me 47 minutes to view and download the second 50 records. That's a total of 1 hour, 56 minutes, or about one minute for each record. At that rate, it would have taken me about 9.5 hours to download from the website all 571 instruments that were recorded on August 4, 2010.

I declare under penalty of perjury that the foregoing is true and correct.

Kathy Idsvoog

Kathy Idsvoog

SWORN TO AND SUBSCRIBED to before me on this 13 day of May, 2011.

Jason A. Radachi

Notary Public

JASON A. RADACHI
Notary Public, State of Ohio
My Comm. Expires Aug. 30, 2014

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PUBLIC RECORDS POLICY

Access to information concerning the conduct of the people's business is a right of every person in this state. Records of the Auditor of State (AOS) which are not exempt from disclosure under the law are available for inspection and copying in accordance with the Ohio Public Records Act. Requests for records may be made during regular business hours to:

Auditor of State, Mary Taylor, CPA
Attention: Open Government Unit
(800) 282-0370 or (614) 466-4514
88 E. Broad Street, 5th floor
Columbus, Ohio 43215
ogu@auditor.state.oh.us

You may view the records you have requested at all reasonable times during the regular business hours of this office. If you wish to view public records of our office, we will promptly make them available to you. If you wish to receive copies of records, we will provide them within a reasonable period of time. "Prompt" and "reasonable" take into account the volume of records requested; the proximity of the location where the records are stored; and the necessity for any legal review of the records requested.

Once we have received your request, we will provide our response or acknowledge your request and provide you with: an estimate of when you should expect our response, an estimated cost if copies have been requested, and the items (if any) that we expect may be exempt from disclosure. If at any time prior to completing our response, we believe our response will take longer than initially estimated (because of the volume of records requested, the proximity of location where the records are stored; or the complexity of the legal review); we will inform you of this change.

It is within your rights not to:

Disclose your identity to the AOS when you request records (you will be given a "public records request number" which we will use to track our communications with you and our response(s) to your request);

Provide our office with a written request; and

Provide a reason why you have requested these records.

If any portion of your request for records must be denied because the records are exempt from disclosure under the law, we will inform you which records you have requested are not public by clearly marking the portion "redacted" or we will explain which portions of the record(s) have been redacted. In addition, we will provide you with the legal authority upon which we have relied.

Please note that if we have denied your request because it is overbroad, ambiguous, or doesn't reasonably identify our records, we will provide you with information about how our records are maintained and if you wish, you may revise your request for the records.

A fee for copies of public records may be charged which covers the direct costs of duplication incurred by the AOS; currently this fee is $.05 per page and $1.00 per CD-ROM. In addition, actual cost of postage or other delivery may be charged. We may require payment of these fees prior to processing your request. It is the policy of the AOS to waive charges to a requester for duplication of 20 pages or less per month.

Feel free to ask our Open Government Unit any questions you may have about public records.

AOS public records policy updated on 9/29/07

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AOS public records policy updated on 01/10/11