

Counterfeit Detection Manual



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Authenticating Documents

The purpose of this manual is to show you the basic security features on U.S. currency, checks, credit cards, IDs, and other documents of value and how to use some simple tools and techniques to make it easier to identify a counterfeit.

This manual does not guarantee that you or your employees will never accept a counterfeit bill, credit card, fake ID, or other counterfeit document. What it will do is give you the knowledge and techniques to identify most counterfeits and make it much harder for criminals to defraud you.

Counterfeiting has been a problem since man first started producing money and will continue to be a problem in the future. Today we hear more and more about counterfeiting all kinds of goods from pills to purses, from airplane parts to watches. The bottom line is, anything of value, especially if it can be easily replicated, will be counterfeited. This manual primarily will focus on U.S. currency but many of the items in this kit can be used to identify real items from fakes.

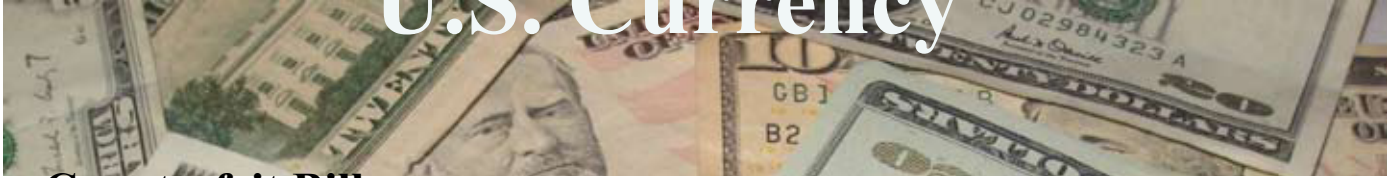
During the 1980s advances in color scanners and copiers/printers allowed anyone who owned them to produce extremely good paper-based counterfeits. Businesses buying these early and expensive color copiers had to sign agreements ensuring that they would not use these machines to produce currency, checks, and other documents of value such as stock or bond certificates. Copier companies went to the added effort of putting special chips in their copiers that would recognize currency and not allow a copy to be made. As with all security features, it didn't take long for the bad guys to figure out a way to beat the system and use color copiers to make phony money, checks, bonds, event tickets, and other paper-based documents of value.

But today there is no need to buy an expensive color copier. Anyone can simply go to the nearest office supply or electronics store and for less than \$100, can buy a scanner/copier that can reproduce an excellent copy of almost any currency or document. It's no wonder that the instances of counterfeit currency, checks, and other paper-based documents have risen exponentially over the last decade.

But counterfeits produced by copiers are the easiest to detect. The really good fakes come from foreign countries that try to flood the U.S. and other countries with extremely good counterfeit bills. For years, Iran, North Korea, and Colombian drug lords have used similar printing presses operated by the U.S. government to produce extremely good counterfeit \$100 bills, sometimes referred to as the "Super 100s".

There are many products on the market that can help identify counterfeits. Most counterfeit detection systems come with little or no instructions so their use and effectiveness are greatly reduced. This manual will help you and your staff understand the security features of all U.S. currency (and other money related items) so that making a determination on a bill can be done with confidence and a higher probability that counterfeits will not be taken.

U.S. Currency



Counterfeit Bills

Counterfeiting U.S. currency is a big problem but according to the U.S. Secret Service, worldwide counterfeit U.S. notes only amount to .01-.02% of the currency in circulation. That still amounts to more than 16 million counterfeit notes produced annually. Assuming that criminals only counterfeit the larger denominations like the \$20, \$50, and \$100 the value of these counterfeits can range from \$328,000,000 to \$1.6 billion per year! One must also factor in that if a business takes in a counterfeit bill, it must generate at least three times as much revenue as the counterfeit bill's value just to break even. So that \$1.6 billion can rise to \$4.8 billion or more in annual losses.

The U.S. government takes counterfeiting currency and other value documents very seriously. The U.S. Department of the Treasury is responsible for designing and printing U. S. currency through the Bureau of Printing and Engraving. The job of protecting U.S. currency falls to the U.S. Secret Service which until 2003 was a part of the U.S. Department of the Treasury and now falls under the Department of Homeland Security.

In the past few years the appearance of U.S. currency has changed dramatically. Most of these changes were made to make the U.S. bills harder to counterfeit. The new currency has several security features that can easily be seen by the naked eye, but in most cases people don't take the time to look or don't understand how the security features work.

Another problem with U.S. currency is that no matter how old the bill is, it's still good. Bills have never been recalled so old bills and new bills get mixed together and each version of the same bill has different security features. Most governments periodically issue new currency and recall or make holders of the old currency exchange their old bills for the new ones. This winds up being a boost for the government because those who don't bring back their old currency and exchange for new are simply out of luck, or cash in this case. The government benefits because currency is basically an IOU issued by the government. When they don't have to pay out on the IOU, they benefit, you lose.

The United States does not recall its money and repeatedly states that it will not. The reasons for this are primarily two-fold. U.S. currency is used all over the world as a secure and stable currency that protects foreigners from devaluation and inflation in countries that may be unstable due to regime change, war, or other chaotic political situations. Recalling U.S. currency would send economic panic (or worse) throughout many countries around the world. Second, U.S. currency held in foreign lands represents a free loan to the US government. Currently almost 60% of all currency is held by foreigners in their home countries. This means that the U.S. government has a vested interest in protecting their currency not just at home but globally. So old bills, new bills, and future bills can and will be used as legal tender in the U.S. and the rest of the world.

In the 1980s digital scanners and color copiers started to be placed in the market. These scanners and copiers allowed anyone that could make a copy of anything, including cash. Since these machines cost thousands of dollars, access was limited and so was the counterfeiting done with them. As these machines became cheaper in the 1990s and thus available to the general public, the occurrences of counterfeit cash and documents rose at alarming rates. Now for less than \$100 anyone can, theoretically, be in the counterfeiting business. According to the U.S. Secret Service, less than 1% of counterfeit currency was digitally reproduced in 1995. By 2002 that number had jumped to almost 40%!

The U.S. Treasury Department took action and starting in 1990 redesigned most of the U.S. currency with more and better security features. The new features are only found on the \$5, \$10, \$20, \$50, and \$100 bills. The \$1 and \$2 were not redesigned and there is no effort in the works to do so.

Since 1990 there have been three major redesign efforts to add security to U.S. currency. The first consisted of adding a security strip and micro-printing to the bills. The second was a redesign of the portrait making it larger, along with other security changes affecting primarily the front of the bill. The third and last redesign called the “New Color of Money” again modified the portrait, added better security features, and added various colors and new images to the bills.

Each bill (\$5, \$10, \$20, \$50, and \$100) is scheduled to be redesigned every seven to ten years. The next bill due for redesign is the \$5 scheduled for release in early 2008. A redesigned \$100 will be coming out after the \$5 but no date has been given for its introduction.

Paper money does have a useful life and it varies depending on the denomination. The chart below shows the average time a bill is in circulation. Used bills are collected by the Federal Reserve Banks, destroyed, and exchanged for new bills.

Denomination	Average Time in Circulation
\$1	22 months
\$5	24 months
\$10	18 months
\$20	25 months
\$50	55 months
\$100	60 months

Each bill has a series year printed on it. The series year signifies the year the redesign was made to the bill, not the year it was printed. So even if a \$20 bill was printed in 2007 it will still bear the series year 2006, when the last major changes to it occurred. The series year only changes when a new design of the bill occurs or a new Secretary of the Treasury takes office. If a new Treasurer of the United States comes into office but the bill design and the Secretary of the Treasury remain the same, then a letter after the series year is added. Therefore you may see bills that have an A or other letter next to the series year signifying a change in the Treasurer.

The Bureau of Engraving and Printing produces all the U.S. currency. According to their web site www.bep.treas.gov they produce about 35 million bills per day and annually more than 8 billion notes. 95% of the notes are used to replace older notes and 5 % are used to increase the money supply.

Checking Currency

NOTE: Before checking to see if a bill is valid it is important to have a policy in place before any procedure is performed.

According to the U.S. Treasury's Bureau of Printing and Engraving web site the following procedure should be followed if you receive a counterfeit note.

"If you think you've received a counterfeit note, do not return it to the passer. Delay the person if possible, without causing harm to yourself. If you live in the United States, immediately notify the local police or the U.S. Secret Service; if you live outside the U.S., notify the proper law enforcement authorities. Note the passer's physical characteristics, and write down the license plate number and description of a vehicle when possible. Safeguard the note and release it only to the proper authorities."

The key sentence in this policy is the second one about "causing harm to yourself". In many cases trying to stop a possible counterfeiter can be a real and dangerous situation. Many establishments opt to tell the customer that has given a "suspect" bill for payment that the bill is indeed "suspect," not counterfeit, and that it can't be accepted by the establishment. The possessor of this bill should be directed to take the "suspect" bill to a bank and have it exchanged for a better one.

Noting the passer's physical characteristics, license plate number, vehicle description, and other information is a good practice for any suspected criminal activity but should only be done when there is little or no risk to the employee that gets this information.

If bills are to be checked, **several security features** should be tested before determining the authenticity of the bill. Each security feature on bills can be beat by criminals but by checking several, the probability of spotting a true counterfeit increases. Also the various security features can be altered due to the age of the bill or other environmental situations making a false-positive also highly probable. Therefore it is important to check several features on a bill before accepting or rejecting it. Again, make sure a policy and action plan as to procedures to follow if a suspect bill is presented is in place before checking any currency.

It is also important to note that although each bill has printed on it the following statement, "THIS NOTE IS LEGAL TENDER FOR ALL DEBTS, PUBLIC AND PRIVATE" this is not necessarily the case. The definition of legal tender is in the Coinage Act of 1965, section 31 U.S.C. 5103. Even so, there is no federal statute that demands that currency be accepted as payment of debt, but there may be state statutes that do. Even the IRS tells you not to send cash for your tax payment. It's also why you may have seen signs at various retail or commercial establishments that state, "We accept no bills over \$20, or no coins allowed", etc. You may also want to establish some criteria as to what kind of bills you will or won't accept as payment but check with your state laws first.

How to Authenticate a Bill

The Counterfeit Detection Kit contains several products that can aid you in determining the authenticity of currency. Before using any of the items in the kit familiarize yourself with the products and how they work.

Below are some basic security features that all bills have in common even the older ones. Remember that 95% of currency produced is to replace existing bills, so if you are presented with a lot of older bills (pre-1996 series) at one time they should be checked carefully. Pre-1996 series bills have the least security features and therefore are the easiest to counterfeit.

Security Features -All bills, \$1 - \$100; All Series

Intaglio Printing

The U.S. Treasury does not replace older security features when it adds new ones. One of the best security features on all U.S. currency and one of the oldest is the actual feel of the money. Many tellers at banks can “feel” a fake even without looking at it. This is because the intaglio printing presses used by the U.S. Bureau of Engraving and Printing that print U.S. currency actually layer ink. If you take a bill and rub your finger over the portrait, especially around the collar, it will feel rough, not smooth. Counterfeit bills printed by a regular printing press or color copier will feel flat, like a regular piece of paper.



Intaglio printing produces a rough surface that can be felt by rubbing your finger over the portrait.

Positive Security Feature: Raised print is easy to check by rubbing your finger over the portrait. Ink should have a rough feel to it.

Negative Security Feature: As bills stay in circulation the raised print wears away and becomes harder to feel. Fake bills can be crumpled or folded to “rough” up the surface and give them the feel of a real bill

Currency Paper



Mark bill with Counterfeit Detection Pen. If ink appears yellow or clear, bill may be good. If ink turns black like below, then it is suspect.



The paper used to produce U.S. currency is very unique and is composed of 25% linen, 75% cotton fibers plus special red and blue synthetic fibers. This paper can't be purchased and is made without the use of starch in the paper making process.

Almost all paper uses starch in the paper making process. The counterfeit detection pen uses a special iodine based ink. When iodine comes in contact with starch it turns black. Rub the pen over a bill and if it stays yellow or clear, the bill may be good. If it turns black it may be counterfeit.

Using the counterfeit detection pen is not a bad idea but it is recommended that this not be the only device used to check the currency. Most currencies in the world use non-starch based paper. So criminals get cheap foreign bills, bleach out the ink and use this paper to print counterfeit bills.

Another trick is to take a \$1 bill, bleach out the ink and print a higher denomination like a \$50 or \$100 over the real \$1. Another scam is for counterfeiters to take a legitimate bill and cover the bill in spray starch. They use this where the criminal knows that bills are being checked by a pen and if it turns black the person offering the “fake” bill is accused of passing a counterfeit. The crook cries foul and it will eventually be determined that the bill is in fact real. The crook then sues for false arrest.

Again, this is why your company or organization have a policy be in place when checking bills before accusing someone of passing a counterfeit. Many companies have found that when they determine that a bill is suspect they state just that, “This bill is suspect,” and recommend the person with the bill return it to a bank for another one.

Positive Security Feature: Special no starch paper – will not turn iodine based inks black.

Negative Security Feature: Counterfeiters can use other currency paper to produce what passes as a real bill under this simple test.

Blue and Red Fibers

All bills have very fine blue and red fibers that are randomly distributed throughout the paper both on the front and back. Because of the randomness of the distribution, no two bills will have the fibers located in exactly the same place. The fibers are tough to spot and should be checked using the 10X magnifier.

Positive Security Feature: Tiny fibers are difficult to replicate using digital copiers.

Negative Security Feature: The position of the fibers are random on each bill so finding them takes time and due to their small size can be overlooked.



Notice fine blue and red fibers in the currency paper. This photo was taken with the help of the 10 X magnifier.

Portrait




There is a picture of a famous American on each bill produced. The name of the individual is located below the portrait. The current bills have a group of U.S. founding fathers that have been on their respective bills since 1929, so any bill you get will have their picture on their corresponding bill. Starting with bills designed in 1996 and after the size of the portrait increased significantly.

The chart below identifies the individual and the corresponding bill that person is on for all currency produced in the U.S. for almost a century. The last name of the individual appears below the portrait.

Note that the only bills in circulation today are the \$1, \$2, \$5, \$10, \$20, \$50, \$100. If you see any other bill – DON'T TAKE IT!

Denomination	Person
\$1	George Washington
\$2	Thomas Jefferson
\$5	Abraham Lincoln
\$10	Alexander Hamilton



\$20	Andrew Jackson	
\$50	Ulysses Grant	
\$100	Benjamin Franklin	
<i>Other U. S. bills produced but no longer in circulation</i>		
<i>\$500 *</i>	<i>William McKinley</i>	
<i>\$1,000 *</i>	<i>Grover Cleveland</i>	
<i>\$5,000 *</i>	<i>James Madison</i>	
<i>\$10,000 *</i>	<i>Salmon Chase</i>	
<i>\$100,000 *</i>	<i>Woodrow Wilson</i>	

* These bills were produced by the Bureau of Printing and Engraving and are no longer in print or circulation. If you see one of these bills, DON'T TAKE IT!

You should be familiar with the faces on the bills since criminals will take a smaller denomination, like a \$1 and paste a higher value number like a \$50 or \$100 on the corners. So if you see a \$100 bill with Washington's picture on it, it's a counterfeit.

Positive Security Feature: Each denomination has a unique portrait on it that corresponds to a specific dollar value.

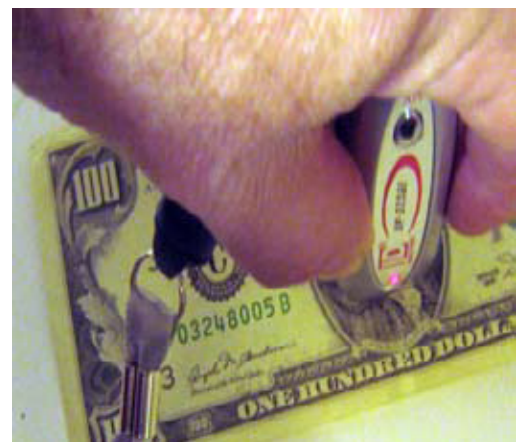
Negative Security Feature: Criminals can paste a different \$ value on the corner of a smaller denomination bill. People don't know or check the portrait with its respective denomination.

Magnetic Ink

Every bill has magnetic ink on it. The easiest spot to check for this ink is around the portrait. Use the mini-UV light/magnetic detector to check this feature.



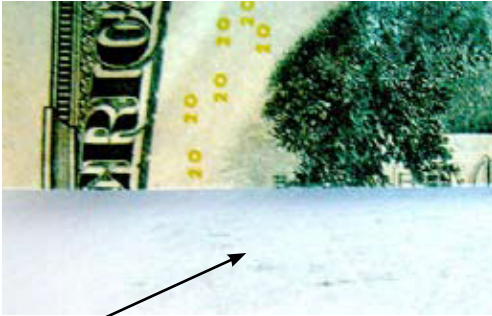
Push button on side of Mini-UV Light to activate magnetic detector. Keeping the unit perpendicular to the bill's portrait rub across and listen for chirp to verify magnetic ink.



Security Feature Positive: Magnetic ink around the portrait can be detected with special equipment.

Security Feature Negative: Most black-only HP laser printers use a form of magnetic ink. This can be added to a fraudulent note to give it the same characteristics as a real bill.

Green Ink



Rub green ink onto white paper to release ink.

There are other security features on the bills like the “never dry” green ink. Take any bill and a sheet of white paper. Rub the green side of the bill over the paper and it will come off on the paper. You have to rub hard but it does work. If the bill was printed with an offset printer, a digital copier, or inkjet printer, you get nothing.

Positive Security Feature: Green ink never dries. It will rub off on paper if rubbed hard enough.

Negative Security Feature: Age of bill or amount of force used can give false determination if ink does not come off.

Serial Numbers

Anybody who has ever played liar’s poker knows that each bill has a unique serial number printed on it. The serial number usually has one or (after 1996 series) two letters preceding it. If a real bill is copied, it will have the same serial number as the original. If you spot similar bills with the same serial number on them, then you know at least one of them is counterfeit.



Security Features -\$5, \$10, \$20, \$50, \$100 - Series 1996 and Higher

Below are security features found on bills that were produced after 1996. Since it’s not worth any counterfeiter’s time and money to produce counterfeit \$1 and \$2 bills, the U.S. Treasury has decided not to add new security features to these bills. The new series of bills that started to come out during the 1990s added several security features to the ones above.

Security Thread



For best results place Mini-UV light under bill and the limit the amount of white light shining on bill.

This is a thin plastic strip that is embedded in all new \$5, \$10, \$20, \$50, and \$100 bills. The thread can only be seen by either holding the bill up to a light or shining a light through it. The thread has the amount of the denomination on it plus additional features. The thread can be read from either the front or back of the bill. The print is small, so you may have to use a magnifier to see the print and symbols. In 1996 series bills and newer ones, the thread glows a specific color when subjected to a UV (Ultraviolet) or black light. Each thread is located in a different position so a bill can’t be “washed” (the ink is removed from a real bill) and a higher denomination printed over it. This has been a problem with the \$100 bill. Counterfeiters “wash” the \$5 bill and print a \$100 over it. Even though the threads are not exactly in the

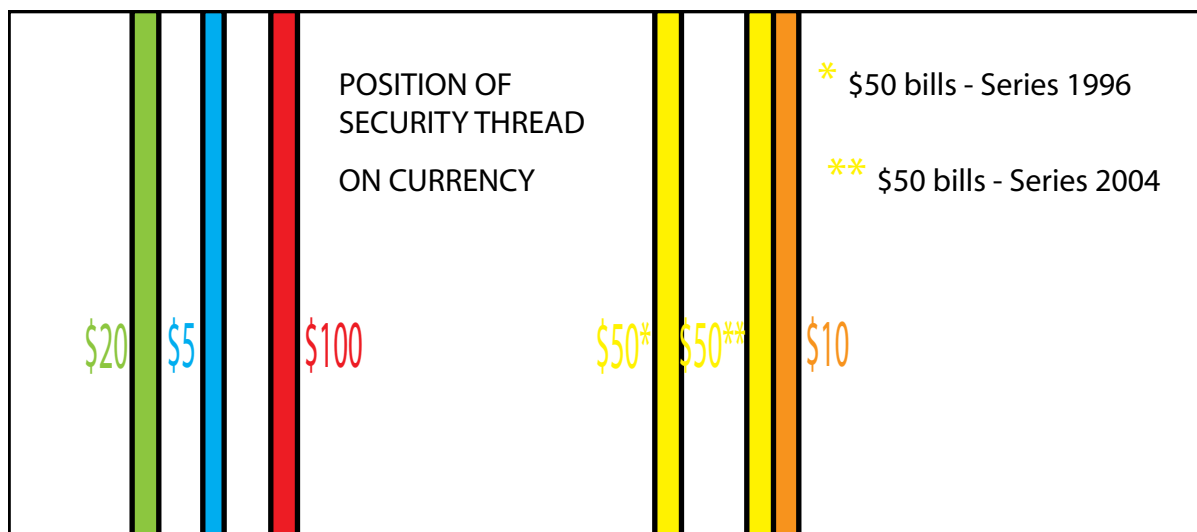
same position they are close enough to pass a quick inspection, especially without checking the UV properties.

It should be noted that starting with series 1990, then 1993, followed by 1995 series bills, a security thread with no UV properties was placed in bills. It's location was left of the seal and could be viewed by holding the bill up to a light. Since most of these bills have been retired you should not encounter many of them.

Below is a chart with the specific thread information for each bill.

The charts below shows the position and information of the security thread found in new bills.

Denomination / Series	Security Thread Print	Color under UV light	Position on bill
\$5 Series 1999-2003	USA FIVE + 5 on Flag	Blue	Left of portrait
\$10 Series 1999-2004	USA TEN + 10 on Flag	Orange	Far right of portrait
\$20 Series 1999-2004	USA TWENTY + 20 on Flag	Green	Far left of portrait
\$50 Series 1996-2004	USA 50 + 50 on Flag	Yellow	Right of portrait
\$100 Series 1996	USA 100	Red *	Left of portrait



It is important to note that the longer the bills stay in circulation their respective colors fade and can even change. * This is a major problem with the \$100 bill. The red UV is very difficult to see and in many cases it does not glow at all. The security threads on \$10, \$20, and the \$50s can fade to a yellow color over time. The \$5 seems to work the best and even on \$5 (large portrait version) bills that have been in circulation for a long time the security thread will glow blue.

Also be aware that if someone had some currency stuck in a pocket that goes into a washing machine the whole bill may glow blue under UV. This is because of the bleach and similar cleaning agents used in clothes washing detergents. Again check more than one feature to make a determination.

It is also important to understand how Ultraviolet inks work. Ultraviolet light reacts with certain components in UV inks to make the inks fluoresce or glow. The energy of the UV light wave gets diluted when subjected to white light from light bulbs, the sun, or other light sources. Make sure to keep out as much white light as possible when checking UV ink on currency and other items that use UV inks.

Security Feature Positives: Special thread that has denomination of the bill printed on it and glows a different color depending on the denomination.

Security Feature Negatives: Over time the UV color properties fade or disappear. A UV light is needed to check the color properties and a magnifier may be needed to check the print and the symbols on the thread.

Watermark

Along with the portrait on the \$5, \$10, \$20, \$50, and \$100 bills there is also a watermark of the portrait embedded in the bill. A watermark is produced when the paper is made and can be viewed from either the front or back of the bill. Fake watermarks can be made using white ink that is printed over the front of the bill. It may appear like a watermark, but you won't be able to see it from the back of the bill. Each watermark reflects the image on the portrait so if you get a \$100 bill with Lincoln's watermark it's a fake.



Watermark on \$20 bill shows image of Jackson.

Positive Security Feature: \$5-\$100 series 1996 and higher have a watermark of the portrait that can be viewed from either side.

Negative Security Feature: A fake water mark can be printed on a bill. Although it can only be checked from one side most people don't check the watermark from both sides of the bill.



Micro-print can only be seen with a powerful magnifier.

Micro-Print

Micro-Print is extremely small characters that can only be read with a magnifier. Without a magnifier the micro-print looks like a tiny line. Most personal and business checks use micro-print for the signature line. Micro-print is one of the best security features used to defeat counterfeiters since digital printers can't reproduce the sharp micro-print characters. Most inkjet and color copiers will add tiny specs of different colors to create a black ink versus black ink produced by a printing press will only show black. This feature shows up under magnification.

The U.S. began adding micro-print to bills starting in the 1990s. The problem with micro-print is finding the tiny print. It's in a different location depending on the bill and series. The enclosed U.S. Currency Security Templates are a great aid in finding and evaluating the micro-print on U.S. currency. Simply place the bill into its corresponding template, and use the 10X magnifier to check the micro-print and other security features.



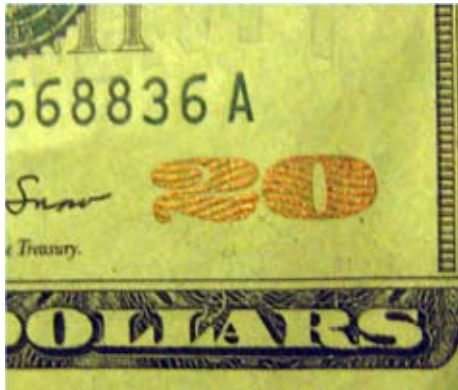
Micro-print can't be reproduced by digital copiers. Notice tiny dots of other color added by a printer versus the clean look of real bill above.

Security Feature Positives: Micro-print is extremely small print that can only be produced on a printing press, not a copier.

Security Feature Negatives: Micro-print is in various positions on each bill and the position has changed with each new series. You need an 8X or 10X magnifier to see it and a system to know where to find the print depending on the denomination and series.

Color Shifting Ink

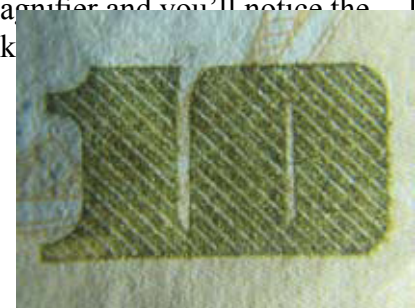
Starting with the 1996 series of \$50s and \$100s a new color shifting ink was used to print the denomination in the lower right hand corner of the bill. The original ink color shifted from green to black. If you look directly down at the ink, it will be green. Tilt the bill and it turns black. With the new series of \$10s, \$20s and \$50s that started to come out in 2004, the ink was changed to a copper/green combination. The color switch effect works best in bright light. You can also check this ink with the 10X



Look directly down on the denomination number and it will appear one color.



Tilt bill on angle to see color change.



Notice how color shifting ink "sparkles" when viewed with 10X magnifier

Positive Security Feature: Color shifting ink changes color when viewing the bill from different angles.

Negative Security Feature: Early green/black ink proved difficult to distinguish color contrast and bill must be viewed in a bright location for best results.

New Security Features - "New Color of Money" Bills, \$10, \$20, \$50

The colorful bills now being printed offer all the old security features and have a few additional ones. Since the new \$5 and \$100 bills will be coming out soon, it's a pretty safe bet that they also will incorporate some of these new features.

Reflective Ink Emblems

A new metallic-like ink is being used to print new emblems called the symbols of freedom. The \$10 has the torch from the Statue of Liberty, the \$20 has an eagle and the \$50 has a star. These symbols are found on the right side of the front of the bill and use a metallic type ink. A larger version of the same symbol is found on the front left side of the bill and uses regular ink. When you check the symbol with the 10X magnifier you can see the ink sparkles like the color changing ink. The main difference with the symbols versus the color changing number is that the symbol does not change colors if tilted.



Torch on \$10 Bill



Eagle on \$20 Bill



Star on \$50 Bill

Positive Security Feature: New emblems add color to the bills and have a sparkling effect when viewed under bright magnification.

Negative Security Feature: You need a magnifier to see the effects of this ink.

Infrared ink

Another feature that is found on the new \$10s, \$20s and \$50s is infrared ink (IR ink). This ink transmits light at a frequency that is outside the range of the human eye. In order to see the infrared stripe on the back of these bills you need a special infrared camera and monitor.



Positive Security Feature: Totally covert and secure IR ink.

Negative Security Feature: Need to have special and expensive IR camera to check bill. Only useful for checking new \$10s, \$20s, and \$50s.

The IR ink stripes on the back of a \$10 bill show up on the screen of a special IR camera system.

Basically the look and feel of a bill, especially crisp new ones, should allow you to determine the authenticity of it. There are some really good counterfeits like the “super 100’s” produced by North Korea that even banks have taken in. But in most cases these are few and far between.

Looking at a bill and examining it does a lot to deter criminals from passing phony money. When you see that you are taking time to inspect a bill, the risk factor has just gone up and many times the criminal will go down the street and hit a target that isn’t paying as much attention. With all these tools and knowledge you’ve lowered your risk of taking most of the counterfeits floating around today.

Checking bills takes time. Most people that accept cash spend all their time counting it and not really looking at it. Compare this to the amount of scrutiny given to credit cards and checks. How much time should be given to authenticating cash? That depends on the policy you set up, what techniques and equipment are used to check the bill and how familiar your people are with the various security features on each bill.

The first thing you need to do is set up a policy of how you will handle a suspicious bill. Next review the security features in this manual, practice using the tools provided, and figure out the best and easiest way to implement them on a daily basis.

Spending a few extra seconds checking a bill can be the difference between taking a fake and a real one. All criminals have one thing in common, they’re risk adverse. If you can increase the risk of them getting caught then they will look for someplace that is an easier target.

Other Uses for security devices in this kit

Many items of value contain security features that this kit can help identify as authentic. Items like driver's licenses, passports, credit and debit cards, stock certificates, checks, and money orders have various security features imbedded in them that can be identified using some of the products found in the Security Kit.

Foreign Currency

Foreign currency, just like U.S. currency, has various security features. Since every currency is different, this manual can't cover all the various security features of every currency used around the world. One feature that most world-wide currency shares is UV ink. Again, just like U.S. currency, check the foreign currency for UV ink and the specific colors and positions of this ink on various denominations.

Driver's Licenses

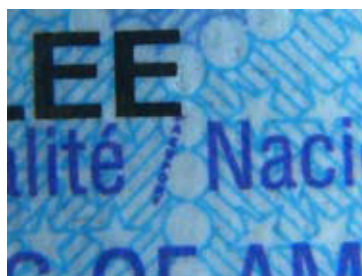
There are over 250 different driver's licenses issued by the 50 states. That means each state can issue over 5 different licenses. After 9-11, most states developed plans to add more security to their licenses to make them harder to counterfeit.

Each state puts different security features on their licenses but one of the most common features found on most, but not all, licenses is UV printing. Use the mini-UV light to check your state's driver's license to see if it has any UV ink on it. It may be either on the front or back. Many fake IDs will not have the UV printing on it since it is rarely checked.



Back of PA license shows UV ink under UV light. Most driver's licenses have UV ink on front.

Passports



Slash marks on new passports are really micro-printing.

U.S. passports have several security features and one of them is UV ink. You can find the UV ink by checking the pages in the passport. Many of the immigration stamps used by various governments use a UV ink and this can also be verified using the mini-UV light. New passports have micro-printing and this can be checked using the 10X magnifier on the front page of the passport. Since passports are only good for 10 years most passports will have the UV and micro-printing on them.

Credit Cards

Credit cards are a world-wide product and counterfeiting them along with identity theft have turned into a multi-billion dollar global market. Use of credit (and debit cards) is an ubiquitous function in our daily lives. Go to the store, the gas station, get a boarding pass, stop at an ATM, everywhere you go, so goes your card.

It used to be that thieves had to steal your card to use it. Not any longer. The modern thief gets the information from your card without it ever leaving your person. They've created phishing sites on the Internet. These sites replicate real Internet sites and may proclaim to be your bank, or retailer, or other web site that you have done business with. This fake site may ask for personal information like social security number, credit card number,

address, bank account, and other information. These sites then take this information and sell it to criminals that reproduce fake credit cards and other items that can be used to steal your identity. There are other products called skimmers, small electronic units that fit in the palm of your hand, that skim or copy the information located on the magnetic stripe on the back of your card which is then transferred to another card and used illegally.



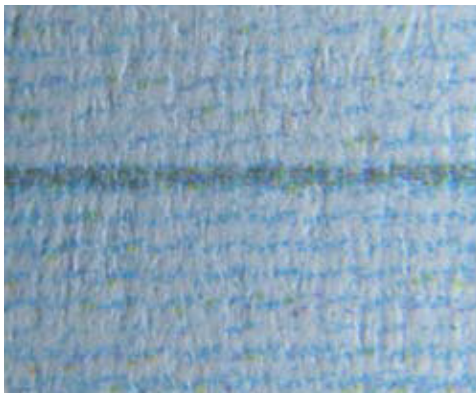
Most credit cards use UV ink.

Thieves have even made the skimmers small enough to fit behind the credit card acceptor used in self-serve gas pumps. When you buy gas, your credit card information is stored on a skimmer and later retrieved by criminals to put this information on counterfeit cards. Most counterfeit cards are produced at least 6 months after your purchase. Can you remember every credit card purchase you've made with your cards in the last 6 months? I can't either and that's why the thieves keep this information for a period of time before selling it on illegal Internet sites.

The credit card companies do their best to protect their cards by electronic means but one of their oldest security features and still in use today is printing the card name or logo using UV ink. Using the mini-UV light check your credit cards to reveal the UV image or letters printed on the cards.

Another feature found on newer cards is micro-printing. Check around the logos and edges of credit cards to see the micro-printing using the 10X magnifier.

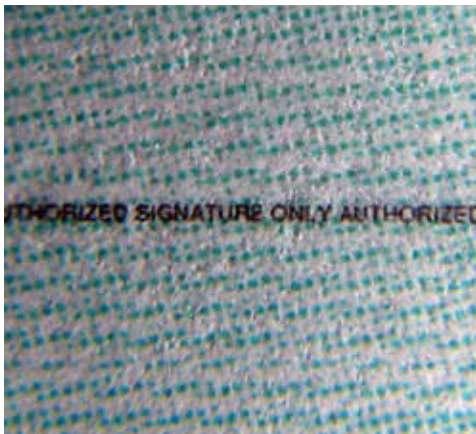
Checks



Check on top shows fuzzy microprint compared to real check on bottom.

Check fraud is a big problem everywhere. There are many security features found in most checks but the problem is, like with most security documents, almost none of them are used to authenticate that a check is valid.

All checks use MICR (magnetic ink character recognition) characters found on the bottom of each check. These unique looking numbers produced with MICR ink produce a specific image on an oscilloscope that identifies the bank and account the check was written on. These numbers allow the Federal Reserve banks to transfer balances to and from member banks. This system was developed in the 1950's and criminals found that this old technology could be easily used to steal money from legitimate accounts. MICR ink used to be hard to obtain, but now many small laser printers use an ink that has MICR characteristics.



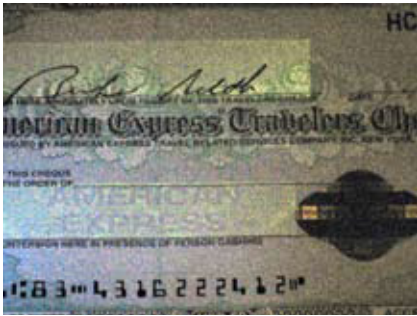
Making a fake check has also been made easier since most office supply stores sell check-stock that looks as official as any check issued by real companies. Cheap color scanner/copiers can make really good duplicates and if the thieves use check-stock, even the security features will look legitimate.

Criminals that pass phony checks many times use cheap color scanner/copiers to produce the final product. Digital printers

many times add several colors to replicate the original color on the check. Use the 10X magnifier to check the ink and micro-printing which is found on most checks.

Traveler's Checks

Most Traveler's Checks have a number of security features on them. Each company that issues these checks may offer some but not all security features like holograms, security threads, water marks, moiro-printing, MICR ink and UV ink to secure their checks. These easiest way to authenticate Traveler's Checks is to check the UV ink and the micro-printing with the mini-UV light and the 10X magnifier.



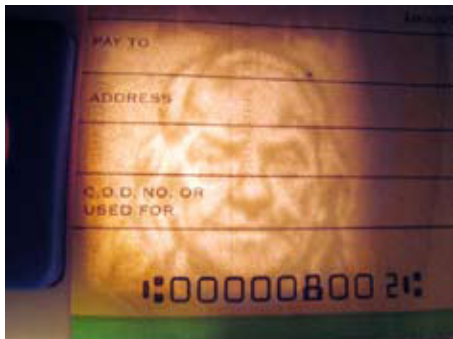
Signature area shows green UV background under UV light.



Micro-print signature line.

U.S. Postal Service Money orders

U.S. Postal Service money orders are used by many people to transfer money and pay bills. There are two basic identifiable features on these money orders. First, a watermark of Ben Franklin. Second, a security thread with USPS printed on it that turns red under UV light along with tiny UV threads embedded in the paper



Watermark of Ben Franklin shows up under regular light.



Under UV light, security thread glows red and tiny UV threads embedded in paper also show up.

UV Pen



Use UV ink pen to mark bills or other items. Check mark with mini-UV light.

Another way to secure any document or item is to use the UV pen contained in the kit. This pen can invisibly mark almost anything and can be easily check by using the mini-UV light. The pen is great for marking valuable items like computers, jewelry, money, books for college students, clothing and just about anything you want covertly identify at a later date.

Any item produced on paper that can easily be converted money or merchandise will be counterfeited. Coupons, lottery tickets, event tickets, slot machine tickets, rebates, receipts, all have and will continue to be, counterfeited.

Most paper based items of value do have some form of security integrated in the paper, the design or both. but many do not. Even if they do have some security features on them, most of the time the person taking the item has no clue how to tell the real one from the fake.

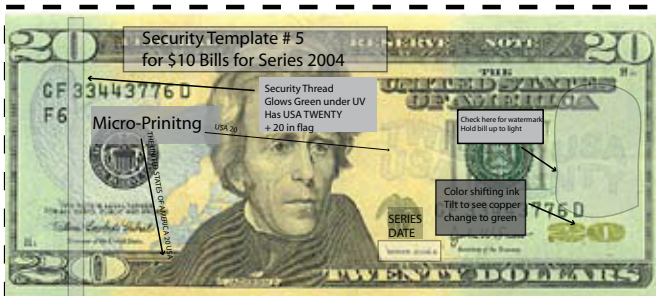
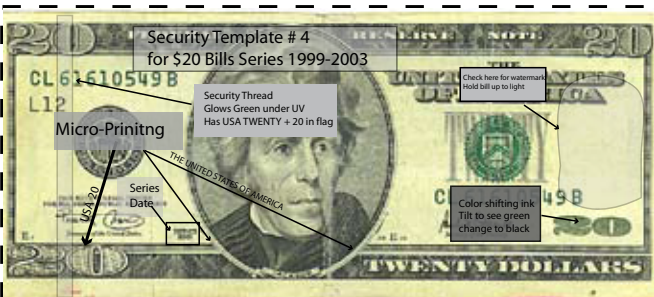
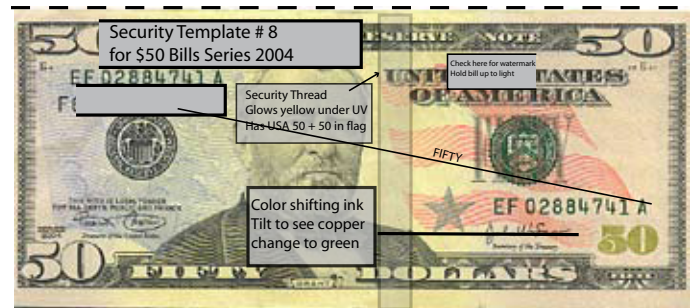
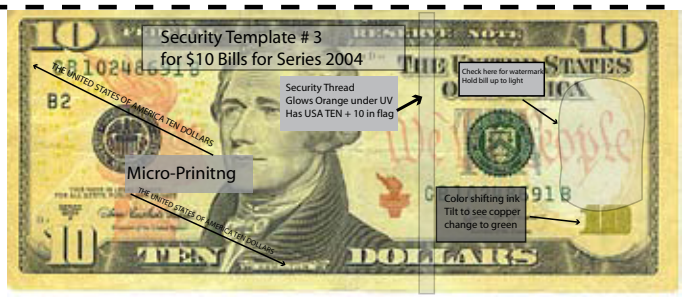
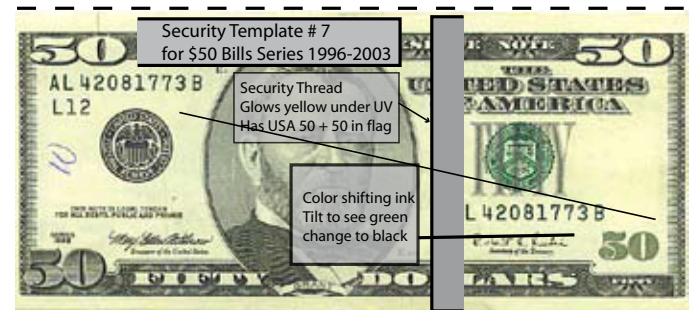
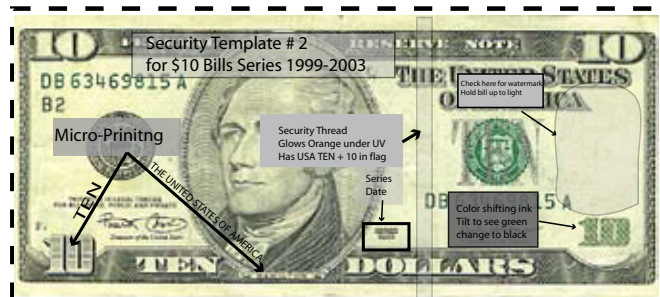
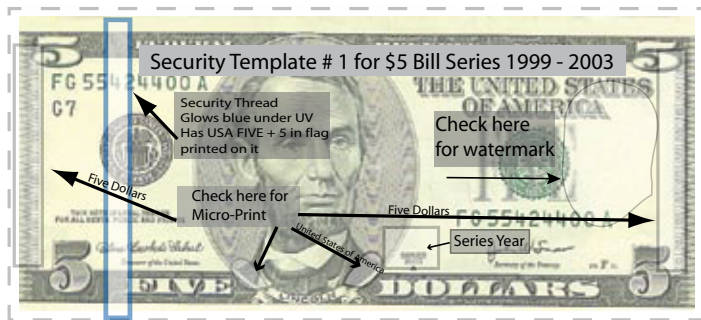
The full time job of a criminal is to find out how to beat the security system in place. Technology has helped create better security and at the same time has given the criminals to tools to produce better fakes. Putting security features on items of value is just common sense. But it doesn't stop there. People must know how to tell a real one form the fake. Hopefully this manual will help you spot counterfeits and only take the real thing.

U.S. Currency Security Features

		Intaglio	Security	Water	Color Shifting	Micro-	Infrared
Denom- ination	Series	Print	Thread	Mark	Ink	Print	Ink
\$1	All	YES	NO	NO	NO	NO	NO
\$2	All	YES	NO	NO	NO	NO	NO
\$5	pre- 1999	YES	NO	NO	NO	NO	NO
\$5	1999- 2003	YES	USA FIVE - Blue under UV	YES	NO	YES	YES
\$10	pre- 1999	YES	NO	NO	NO	NO	NO
\$10	1999- 2003	YES	USA TEN + Flag - Orange under UV	YES	Yes - Green / Black	YES	YES
\$10	2006	YES	USA TEN + Flag - Orange under UV	YES	YES - Copper / Green	YES	YES
\$20	pre- 1998	YES	NO	NO	NO	NO	NO
\$20	1999- 2003	YES	USA TWENTY + Flag - Green under UV	YES	Yes - Green / Black	YES	YES
\$20	2004	YES	USA TWENTY + Flag - Green under UV	YES	YES - Copper / Green	YES	YES
\$50	pre 1990	YES	NO	NO	NO	NO	NO
\$50	1990- 1995	YES	USA 50 No UV	NO	NO	NO	NO
\$50	1996- 2003	YES	USA 50 + Flag - Yellow under UV	YES	Yes - Green / Black	YES	NO
\$50	2004	YES	USA 50 + Flag - Yellow under UV	YES	YES - Copper / Green	YES	YES
\$100	pre- 1990	YES	NO	NO	NO	NO	NO
\$100	1990	YES	YES	NO	NO	YES	NO
\$100	1996- 2003	YES	USA 100 - Red under UV	YES	Yes - Green / Black	YES	NO

U.S. Currency Templates

These templates were designed to allow you to easily identify the various security features found on the various bills in circulation today.



About this manual

Having sold retailers and other institutions counterfeit detection pens, UV lights, magnetic ink detectors, magnifiers and other authenticating devices for more than a decade, I found that many times these devices were not used properly or not used at all because people did not know how, when and why to use them. Providing training sessions worked well for a time but people forget, employees turnover, and changes to money, checks, IDs, and other value based documents seem never ending. A need emerged for a manual and the tools to go with it that people could easily reference whenever they needed it. Thus the reason for this manual.

Some of the information found in this manual have come from seminars, talking with law enforcement officials, bankers, and my own research. The majority of the information found in this manual was obtained at the Bureau of Engraving and Printing web site, www.bep.treas.gov, and at the Secret Service's web site, www.secretservice.gov/know_your_money.shtml.

Although these webs sites provide most of the information you need to understand security features found in or on U.S. currency, it takes quite a lot of time and effort to figure out all the features for all the different variations of U.S. currency in circulation today. Since the government can't tell you what devices to use to inspect currency, it's left up to the individual to figure it out. Plus, most people don't have Internet access at their check-out station but usually do have room for this manual or at least have it nearby for reference.

This manual was designed to be used along with the products contained in the Counterfeit Detection Kit, but other similar devices on the market may be used as well. The main thing is, you need to know what to look for and how to determine if what you're seeing is real or fake.

You also must realize that once you are deemed an easy target by thieves and counterfeiters the probability of you getting again and again is very high. Having this manual sitting out on your counter may be enough of a deterrent to keep counterfeiters from attempting to pass a phoy bill. But just in case, I recommend that you thoroughly read threw this manual and familarize yourself and your employees with the various tools that came with the kit. Practice spotting security features on your own money, credit cards, IDs and other items before you go after the criminals.