

August 1998

# CURRENCY PAPER PROCUREMENT

## Meaningful Competition Unlikely Under Current Conditions



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**United States  
General Accounting Office  
Washington, D.C. 20548**

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**General Government Division**

B-278747

August 28, 1998

Congressional Requesters

In response to section 9003 of the 1997 Emergency Supplemental Appropriations Act<sup>1</sup> and your requests, this report addresses (1) the optimum circumstances for the procurement of distinctive currency paper, (2) the effectiveness of the Bureau of Engraving and Printing's (BEP) efforts to encourage competition in the procurement of currency paper, (3) the fairness and reasonableness of prices paid for currency paper by BEP and the quality of the paper purchased, and (4) the potential for disruption to the U.S. currency paper supply from BEP's reliance on a single source.

This report contains matters for congressional consideration and recommendations to the Secretary of the Treasury.

We are sending copies of this report to the Chairman and Ranking Minority Member of the House Committee on Banking and Financial Services, Subcommittee on Domestic and International Monetary Policy; the Chairman and Ranking Minority Member of the Senate Committee on Banking, Housing, and Urban Affairs; the Director of the Office of Management and Budget; the Secretary of the Treasury; the Director of BEP; the Chairman, Board of Governors of the Federal Reserve System; the Chief Executive Officer of Crane & Co. (the current supplier of currency paper); and other interested parties. We will also make copies available to others upon request.

If you have any questions about this report, please contact me at (202) 512-8387. Major contributors to this report are listed in appendix VIII.

A handwritten signature in cursive script, appearing to read 'Bernard L. Ungar'.

Bernard L. Ungar  
Director, Government Business  
Operations Issues

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<sup>1</sup>Public Law 105-18, 111 Stat. 158, 196 (1997).

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B-278747

List of Requesters

The Honorable Ted Stevens  
Chairman

The Honorable Robert Byrd  
Ranking Minority Member  
Committee on Appropriations  
United States Senate

The Honorable Ben Nighthorse  
Campbell  
Chairman

The Honorable Herb Kohl  
Ranking Minority Member  
Subcommittee on Treasury,  
General Government, and Civil  
Service  
Committee on Appropriations  
United States Senate

The Honorable Jim Kolbe  
Chairman  
The Honorable Steny Hoyer  
Ranking Minority Member  
Subcommittee on Treasury, Postal  
Service, and General Government  
Committee on Appropriations  
House of Representatives

The Honorable Robert Livingston  
Chairman  
The Honorable David Obey  
Ranking Minority Member  
Committee on Appropriations  
House of Representatives

The Honorable Dan Burton  
Chairman, Committee on Government  
Reform and Oversight  
House of Representatives

The Honorable John F. Kerry  
The Honorable Edward M. Kennedy  
The Honorable Alfonse M. D'Amato  
The Honorable Lauch Faircloth

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B-278747

The Honorable William H. Frist  
The Honorable Ernest F. Hollings  
The Honorable Kay Bailey Hutchison  
The Honorable Frank Lautenberg  
The Honorable Barbara A. Mikulski  
The Honorable Fred Thompson  
United States Senate

The Honorable Joseph P. Kennedy II  
The Honorable John W. Olver  
The Honorable Rosa L. DeLauro  
The Honorable John M. McHugh  
The Honorable Gerald B. H. Solomon  
The Honorable James A. Traficant, Jr.  
House of Representatives

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# Executive Summary

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## Purpose

Since 1879, the Bureau of Engraving and Printing (BEP) of the Department of the Treasury has bought virtually all of the paper used to print U.S. currency from a single supplier. Concerned about the lack of competition in the procurement of currency paper, fairness and reasonableness of prices paid, and possibility of disruptions to paper supplies, Congress directed GAO, in the 1997 Emergency Supplemental Appropriations Act, to complete a comprehensive analysis of the “optimum circumstances for government procurement of distinctive currency paper” and report its findings to the House and Senate Committees on Appropriations. GAO received three other requests for a review of the procurement of currency paper. To fulfill the mandate and the requests, GAO focused on the following objectives:

- Have BEP’s efforts to encourage competition for procuring currency paper been effective?
- Have prices paid for currency paper been fair and reasonable, and has the quality of the paper been ensured?
- Is there potential for disruption to the U.S. currency paper supply from BEP’s reliance on a single supplier?

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## Background

BEP, a bureau of the Department of the Treasury, buys currency paper from the private sector and prints the nation’s currency at production facilities in Washington, D.C., and Ft. Worth, Texas. In recent years, the currency paper contract has been about \$75 million per year. The Department of the Treasury oversees BEP’s production of currency. BEP reports to the Secretary of the Treasury through the U.S. Treasurer who is consulted on policy issues affecting BEP and serves as the national spokesperson on such issues as currency redesign. The U.S. Secret Service, another Treasury bureau, works with BEP in assessing the security of BEP’s money production facilities and works with it on currency redesign. The Federal Reserve sets monetary policy for the nation and obtains new currency from BEP and distributes it to the public through depository institutions. In 1997, the Federal Reserve ordered 9.6 billion currency notes of various denominations from BEP, at an estimated production cost of \$383 million.

For the last 119 years, Crane & Co., Inc., (Crane) of Dalton, Massachusetts, has supplied paper for U.S. currency. It currently supplies the three types of cotton paper being used. The first type, distinctive currency paper, does not have any security thread or watermark and is used to print all 1- and 2-dollar notes. The second type contains a security thread and is currently

used for 5-, 10-, and 20-dollar notes. The third type, new currency design paper with a watermark and security thread, was introduced in 1995 and is used for the newly redesigned 100-, 50-, and 20-dollar notes. The newly redesigned 20-dollar notes are scheduled to be put into circulation later this year. BEP plans to use this new currency design paper for newly redesigned 5- and 10-dollar notes next year. In addition, Treasury has initiated a study to project the future demand for currency that it expects to be completed by November 30, 1998.

The procurement of currency paper is subject to an appropriations limitation, called the Conte Amendment, enacted in December 1987 and set forth at 31 U.S.C. § 5114 note. In effect, the Conte Amendment requires that distinctive paper for U.S. currency and passport paper be manufactured in the United States and prohibits the purchase of currency and passport paper from a supplier owned or controlled by a foreign entity unless the Secretary of the Treasury determines that no domestic source exists. The procurement of currency paper is subject to another statutory limitation, set forth at 31 U.S.C. § 5114, which prohibits the Secretary of the Treasury from entering into a contract in excess of 4 years for manufacturing distinctive currency paper.

The United States' reliance on a single source for currency paper is not unique; most of the other G-7 nations<sup>2</sup> also rely on single domestic suppliers for their banknote paper.

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## Results in Brief

The optimum circumstances for the procurement of distinctive currency paper would include an active, competitive market for such paper, where a number of responsible sources would compete for BEP's requirements. However, these circumstances have not existed because of the unique market for currency paper and some statutory restrictions. BEP has been aware of the need to increase competition and has made some efforts recently to do so in areas under its control. However, BEP must procure currency paper within the current statutory framework, which limits currency paper contracts to 4 years, prohibits production of currency paper outside of the United States, and prohibits purchase of currency paper from foreign-owned or controlled entities. Of the 20 paper manufacturers that responded to GAO's survey, 12 said they were interested in and have the capability now, or could be made capable in the near future, of supplying at least part of BEP's currency paper needs if existing statutory requirements and some of BEP's solicitation terms were changed.

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<sup>2</sup>The other G-7 nations are Canada, England, France, Germany, Italy, and Japan.

Seven of the 12 are domestic paper manufacturers, and 5 are located in foreign countries.

Although the long-term relationship between BEP and Crane has historically resulted in quality currency paper, BEP was unable to determine that it had obtained fair and reasonable prices for 13 of the 17 contract actions awarded from 1988 to 1997. BEP sometimes accepted prices even though it was unable to determine that they were fair and reasonable because it had no other source for currency paper. GAO believes that BEP's assessments of the fairness and reasonableness of Crane's proposed prices were hampered by a number of factors, including the lack of market prices for currency paper and the limited analyses of proposed costs and prices it performed, especially on earlier contracts in GAO's sample. In addition, certain BEP practices, such as understating the quantities of currency paper needed, caused, or may have caused, the government to pay more for currency paper than it should have.

As the government's agent for acquiring currency paper, BEP is responsible for ensuring that the government's supply of paper is not disrupted. Although the potential for disruption in the supply of currency paper exists, there have been no such disruptions. However, for many years, because BEP did not maintain a reserve inventory of paper to provide for contingencies, it was more vulnerable to adverse consequences if a disruption had occurred and was at a disadvantage in its contract negotiations because it lacked an alternative source for currency paper. BEP has recently been purchasing paper to build a 3-month reserve supply and, under the Conte Amendment, could buy paper from a foreign source if no domestic source exists.

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## Principal Findings

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### Factors That Have Affected Competition

Obtaining competition in currency paper procurement is challenging, partly because of the uniqueness of the currency paper, which requires a relatively large investment in capital equipment. In addition, special statutory provisions govern the acquisition of currency paper, which provide a 4-year limit to contracts for the manufacture of currency paper, require that it be manufactured in the United States, and prohibit the purchase of currency paper from foreign-owned or controlled entities.



Treasury and BEP completed studies in 1983 and 1996 to determine what it would take to encourage competition for procuring currency paper. The studies identified the following elements that have affected competition, the first three of which could be addressed in part by BEP: (1) the high cost of the initial capital investment to build or retrofit a plant to produce currency paper, (2) an inadequate start-up period to meet specified paper deliveries, (3) the absence of a guaranteed minimum production commitment sufficient to cover the cost of constructing and equipping a plant, and (4) the ownership and control provision in the Conte Amendment.

Twelve of the 20 paper manufacturers responding to GAO's survey of 30 cotton paper manufacturers who said they are capable now, or could be in the near future, of supplying at least part of BEP's currency paper needs also said that they would be interested in supplying currency paper to BEP if certain conditions were met. Nine of the 12 said that the length of currency paper contracts would have to be more than 4 years so that they could recover the necessary capital investment, or BEP would have to offer to finance the capital equipment cost. Six of the 12 said the ownership and control provision of the Conte Amendment would have to be relaxed. Five of the 12 said the amount of start-up time allowed to start delivering the paper had to be longer than BEP has provided in the past.

BEP has recently taken steps to stimulate competition in areas under its control. For example, its latest solicitation provides for up to a 4-year performance period with multiple-award scenarios that allow offerors to submit an offer on various-sized lots. The solicitation also provides that BEP will consider "innovative acquisition and financing arrangements" proposed by offerors and up to 24 months for a start-up period, although any required start-up period is to be deducted from the 4-year production period.

Other agencies have used other options for promoting competition that BEP has not been successful with, such as creating a second supplier. Most of the other G-7 nations rely on single domestic suppliers for their banknote paper.

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**BEP Has Ensured Quality  
but Has Not Demonstrated  
That It Has Obtained Fair  
and Reasonable Prices**

BEP said that Crane has been a reliable source for currency paper and has not missed a paper delivery in over 100 years. Nevertheless, BEP has had problems negotiating prices with Crane. GAO's review of BEP's currency paper contracts from 1988 to 1997, which included 5 contracts consisting

of 17 procurement actions, showed that BEP determined the price to be fair and reasonable for 4 actions and was unable to determine that the prices for 5 actions were fair and reasonable. BEP did not reach agreement with Crane but used Crane's interim prices on the remaining eight actions. The interim prices were subsequently reduced about 4 percent by an arbitrator, and Crane returned \$12.7 million to BEP. A primary disagreement between BEP and Crane has centered on Crane's profit rates. Recently, BEP agreed to higher profit levels on the premise that the supplier's investment in capital equipment would reduce labor costs and the government would benefit through lower prices and improved quality. However, BEP's procurement records did not reflect any data as to how the prices would be lower or how the government would otherwise benefit.

Determining the fairness and reasonableness of currency paper prices is challenging for a number of reasons, including the lack of a domestic market against which to compare prices and the lack of information on currency paper prices in foreign countries. To determine whether prices were fair and reasonable for most of the contracts GAO reviewed, BEP therefore relied primarily on reviewing (1) costs questioned by government audits of Crane's price proposals and (2) Crane's proposed profits. The audits and analyses of proposed profits gave BEP a basis from which to make its determinations and to raise concerns about proposed prices and profits. However, BEP has not obtained audits of Crane's estimating system, and many audits of cost proposals that were requested pointed out problems in Crane's cost accounting system. In addition, until recently, BEP's analyses of Crane's proposed costs were limited in scope; it generally did not do price analyses; and its analyses of profit, in some cases, were incomplete.

Unrelated to the issue of fair and reasonable prices, GAO identified three other BEP business practices that caused or may have caused the government to pay more for currency paper than it should have. First, BEP significantly understated the quantities of currency paper it needed, which sometimes resulted in it paying a higher price than it should have. Second, it did not even out the quantities of paper it ordered over time, causing inefficiencies in its contractor's operations. Third, BEP did not obtain royalty-free data rights for the security thread used in its currency paper.

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**BEP Is Building an Inventory of Currency Paper as a Contingency**

No disruption in the supply of currency paper has occurred to date. Nonetheless, BEP has been vulnerable to such disruptions and in a weak negotiating position because it did not have a second source for currency

paper or have a reserve inventory of currency paper if negotiations were to require more time than expected. BEP continued to buy paper from Crane when BEP's contracting officers were unable to determine whether the prices were fair and reasonable. Although the Conte Amendment provides relief to BEP in that it allows BEP to obtain currency paper from a foreign source if no domestic source exists, BEP officials said the foreign sources would require at least 3 months to deliver currency paper. BEP recently decided to change its "just-in-time" approach to one of maintaining an inventory with a 3-month supply of all three types of currency paper. As of May 1998, BEP officials reported that it has achieved its inventory goals with the exception of the currency paper required for the newly redesigned 20-dollar note, which BEP expects to reach during calendar year 1999.

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## Recommendations to the Secretary of the Treasury

To strengthen BEP's capacity to ensure fair and reasonable prices, GAO recommends that the Secretary direct that BEP improve its procurement practices in the areas of oversight and audit of the contractor's cost accounting and estimating systems, improved analysis and documentation of the basis for acceptance of prices and profits, and post-award auditing. In addition, GAO recommends that the Secretary ensure that in all future currency paper procurements, solicitations more accurately reflect the expected amounts of paper needed and orders are placed for paper quantities that permit supplier(s) to maintain a steady production level and minimize the equipment they have to acquire.

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## Matters for Congressional Consideration

To assist the Secretary in obtaining competition from domestic sources, Congress may wish to consider lengthening the 4-year limit for currency paper contracts to give potential offerors a longer time to recover their capital investments. If adequate price competition among two or more suppliers can be achieved, concerns over whether the prices paid are fair and reasonable should be reduced.

Finally, because BEP's past efforts to encourage domestic competition for currency paper have been unsuccessful and future efforts are uncertain, and because BEP has been unable to determine that it obtained fair and reasonable prices from the current supplier in some past procurements, GAO has concluded that BEP may need additional authority to protect the government's interests in obtaining currency paper. Specifically, GAO concluded that Congress may want to consider revising the Conte Amendment, which allows the Secretary of the Treasury to obtain

currency paper from a foreign-owned source only if no domestic supplier is available, to permit the Secretary to obtain currency paper from a foreign-owned source on a temporary basis if it is determined that no domestic supplier will provide paper at fair and reasonable prices. Such a provision should improve the likelihood that fair and reasonable prices could be obtained.

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## Agency and Contractor Comments

GAO provided copies of a draft of this report to the Chairman, Board of Governors of the Federal Reserve System; BEP; the Department of the Treasury; and Crane for comment. GAO received written comments from BEP that included input from Treasury (see app. VI), written comments from Crane (see app. VII), and oral comments from the Federal Reserve. BEP and Crane also provided technical comments, which are incorporated in appropriate sections throughout the report. GAO's summary of agency and Crane's comments and GAO responses are included at the end of chapter 5, and GAO's detailed responses to Crane's comments are in appendix VII.

The Federal Reserve said GAO's analysis and recommendations were reasonable. BEP emphasized its compliance with the Federal Acquisition Regulation in the award of the five contracts GAO reviewed and generally disagreed with GAO's proposed recommendations or said action had already been initiated. Crane said GAO's proposed recommendations to BEP to encourage competition have already been adopted and no further action was necessary. Crane agreed that the 4-year limit on currency paper contracts could be lengthened but disagreed that consideration be given to revising the Conte Amendment. Crane also said its prices were fair and reasonable.

GAO considered BEP's and Crane's views, made some modifications to reflect these views, but believes that additional congressional action to encourage competition and additional congressional and Treasury actions to ensure prices are fair and reasonable are appropriate. GAO's review did not focus on compliance issues. Although GAO did not determine whether prices were fair and reasonable because this is BEP's responsibility, GAO noted that BEP's contracting officers were unable to make this determination in 13 of 17 contracting actions GAO reviewed, primarily because BEP considered Crane's profits high.

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**Abbreviations**

BEP	Bureau of Engraving and Printing
CAP	Contractor Acquired Property
DCAA	Defense Contract Audit Agency
DOD	Department of Defense
FAR	Federal Acquisition Regulation
IG	Inspector General

# Introduction

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Concerns about the procurement of currency paper resulted in Congress including in the 1997 Emergency Supplemental Appropriations Act a requirement that we complete a comprehensive analysis of the “optimum circumstances for government procurement of distinctive currency paper” and report our findings to the House and Senate Committees on Appropriations. In the conference report accompanying the appropriations bill,<sup>3</sup> the Conference Committee expressed concern over the fact that the Bureau of Engraving and Printing (BEP) of the Department of the Treasury has bought virtually all of its paper for the nation’s currency from a single supplier for over 100 years. The Conference Committee directed that we report on any limitations on competition in currency paper procurement and possible alternatives to the way BEP has been buying the paper, the fairness and reasonableness of prices paid for the paper, the potential for disruption of the availability of currency paper from BEP’s reliance on a single supplier, and other matters.

In June 1997, the Chairman of the House Government Reform and Oversight Committee asked that we also report our findings to that Committee because of its interest in federal procurement matters, and Senator Lautenberg requested that we report our findings to his office as well. In September 1997, 16 members of Congress informed us of their interest in our analysis and expressed their opinion that a review of the potential benefits and drawbacks of a single-supplier relationship would be appropriate.

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## Several Agencies Are Involved With the Acquisition of Currency Paper

BEP buys currency paper from the private sector. It then prints the nation’s currency at production facilities in Washington, D.C., and Ft. Worth, Texas. In recent years, currency paper purchases have been about \$75 million per year. Before 1861, state-chartered private banks issued paper money, and the federal government produced only coins. Partly because of the need to finance the Civil War and a shortage of coins, Congress authorized the Secretary of the Treasury to have notes engraved and printed by private bank note companies in 1862. The actual printing of currency notes by Treasury employees began in 1863. In 1869, Congress authorized BEP to produce currency notes.

The U.S. Secret Service, another Treasury bureau created in 1865, is also involved in currency paper matters. The mission of the Secret Service includes protecting the President and Vice President, their families, and visiting foreign dignitaries; and enforcing laws relating to U.S. money and

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<sup>3</sup>H.R. Report No. 105-119, 105th Cong., 1st Sess., at 108-110 (1997).



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securities, as well as those relating to electronic funds transfer and credit card fraud. The Secret Service works with BEP in assessing the security of the BEP's money production facilities and works with it on currency redesign.

The Department of the Treasury performs four basic functions: formulating and recommending national economic, financial, tax, and fiscal policies; serving as a financial agent for the U.S. government; enforcing laws under the jurisdiction of Treasury bureaus; and overseeing the production of coins and currency. BEP reports to the Secretary of the Treasury through the U.S. Treasurer and the Assistant Treasury Secretary for Management and Chief Financial Officer. Among other responsibilities, the U.S. Treasurer is consulted on policy issues affecting BEP, is a member of Treasury's Advanced Counterfeit Deterrence Committee, and serves as a spokesperson to the public for BEP on issues such as currency redesign.

In addition to Treasury, the Federal Reserve is involved in currency paper matters. The Federal Reserve sets monetary policy for the nation and obtains new currency from BEP and distributes it to the public through depository institutions. The Federal Reserve banks also identify counterfeit currency and destroy currency that is unfit for circulation. In 1997, the Federal Reserve ordered 9.6 billion currency notes of various denominations from BEP at an estimated production cost of \$383 million (which includes the \$75 million currency paper cost).

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### **BEP Has Relied Primarily on a Single Supplier for Over 100 Years**

According to BEP officials, virtually all of the paper used in currency has been bought from a single supplier, Crane & Co., of Dalton, Massachusetts, since 1879. According to a 1983 Treasury/BEP study on currency paper procurement, during the 1960s, BEP attempted to develop a second source of paper by contracting with Gilbert Paper in Wisconsin for about 3 percent of its annual requirements. This supplier declined to submit an offer on subsequent procurements of currency paper because its prices for a portion of the BEP's needs were not competitive with Crane's prices for the entire BEP currency paper requirement. The study also stated that BEP endeavored again in 1982 to encourage competition when it issued a solicitation that would have split the paper requirement among two or more suppliers. This effort also failed because Crane offered a substantially lower price, according to the study.

In the early 1980s, a British paper manufacturer, Portals, Ltd., sought to sell currency paper to BEP and built a manufacturing plant in Hawkinsville,

Georgia. However, the plant closed several years after it was built without receiving any paper contracts from BEP.

In 1991 and again in 1995, BEP entered into developmental contracts with another firm, Crown Vantage Paper Co. (formerly the Communications Paper Division of the James River Paper Company), which had a paper mill in New Jersey, to develop currency paper with an advanced counterfeit deterrence device. However, these efforts did not lead to another currency paper source because (1) BEP discontinued using the paper that Crown was developing; and (2) Crown had problems in meeting BEP's fold endurance specifications and needed technology that was available only from foreign sources to be able to meet requirements of the current solicitation, according to BEP officials.

The Treasury Department and BEP studied the currency paper market in 1983 and in 1996 in an effort to increase competition. These studies identified a limited number of firms capable of producing the cotton/linen fiber paper (also called "rag" paper). Treasury/BEP reported that the rag paper industry is an old and stable industry, characterized by 15 independent paper mills producing about 90 percent of the domestic rag paper capacity. In addition to the domestic producers, Treasury/BEP identified a number of foreign suppliers. Treasury/BEP identified a number of firms, both domestic and foreign, capable of producing currency paper, some of whom might be interested in furnishing all or part of BEP's needs. For security reasons, Treasury/BEP and the Secret Service thought purchasing currency paper produced offshore would be problematic. Treasury/BEP also identified foreign firms interested in joint venturing with domestic firms to supply currency paper from locations in the United States but concluded that the capital investment required would be too costly for this to be successful. The firms interviewed by Treasury/BEP indicated that significant BEP subsidies for capital investment, long-term production guarantees, and economic price redeterminations in contracts would be crucial to any decision to build or retrofit a currency paper plant in the United States.

The 1996 Treasury/BEP report concluded that rather than invest in developing alternative source(s) of currency paper, it would be less costly to work with the long-standing single supplier of paper. However, the report also concluded that BEP should continue to explore the marketplace through competitive solicitations to determine if there were viable alternative sources. The 1996 study also reported that a number of other

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countries, such as England and Germany, used single domestic sources to provide paper for the nations' banknotes.

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## Applicable Laws

Title III of the Federal Property and Administrative Services Act of 1949 (Property Act), as amended,<sup>4</sup> as implemented by the Federal Acquisition Regulation (FAR),<sup>5</sup> generally governs BEP acquisitions. As expressed in FAR, part 15, when contracting in a competitive environment, agencies are to obtain supplies or services from responsible sources at fair and reasonable prices that result in the best value to the government. To accomplish this, agencies are directed to use competitive procedures to obtain full and open competition in most acquisitions above \$100,000. The Property Act provides for several exceptions to full and open competition, one of which may be used when supplies or services are available from only one responsible source and no other supplier can satisfy the agency requirement. Alternatively, an agency may exclude a particular source from a contract action to establish or maintain an alternative source of supply. Such an exclusion may be based on a determination that to do so would increase competition in the longer term and reduce overall cost or would ensure the continuous availability of a reliable source.

When competitive procedures are used and a market consisting of a number of responsible sources for the government's needs exists, the expected result would be adequate price competition so that an agency would be likely to obtain supplies at a fair and reasonable price. For negotiated contracts, the agency must evaluate the reasonableness of the prices submitted. When there is adequate price competition the agency should use price analysis. Generally, when there is not adequate price competition, both price and cost analyses are to be used.<sup>6</sup> If a contractor insists on a price or demands a profit that the agency's contracting officer considers unreasonable during contract negotiations, the contracting officer is to refer the contract action to a level above the contracting officer for disposition. This determination may include consideration of the feasibility of developing an alternative source. In making the determination, factors such as ensuring the continuous availability of a reliable source of supplies may outweigh cost considerations. If cost is the

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<sup>4</sup>41 U.S.C. § 251-266.

<sup>5</sup>FAR implements the procurement statutes and provides uniform policies and procedures for acquisitions by all executive agencies.

<sup>6</sup>See chapter 3 for an explanation of the differences between cost and price analysis.

major consideration, one of the difficult questions is to what extent the agency can expect competition to reduce the cost of supplies.

The procurement of currency paper is subject to an appropriations restriction, called the Conte Amendment, enacted in December 1987 and set forth at 31 U.S.C. § 5114 note. In effect, the Conte Amendment requires that U.S. currency and passport paper be manufactured in the United States and prohibits the purchase of currency and passport paper from a supplier owned or controlled by a foreign entity unless the Secretary of the Treasury determines that no domestic source exists. According to the Conference Report accompanying the Conte Amendment, the requirement was to enhance the security capabilities of U.S. law enforcement agencies.<sup>7</sup>

The procurement of currency paper is subject to another statutory requirement, set forth at 31 U.S.C. § 5114, which prohibits the Secretary of the Treasury from entering into a contract in excess of 4 years for manufacturing distinctive currency paper. Although this provision restricts the length of contracts, according to BEP, the provision originated in 1916 and was enacted to increase the previous 1-year limitation on Treasury contracts to improve the United States' ability to purchase linen and ink pigments from European sources in the event war broke out.

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### Three Types of Paper Are Used for U.S. Currency

BEP currently uses three types of paper for U.S. currency. Distinctive currency paper is used to print all 1- and 2- dollar notes. This paper, which does not have any security thread or watermark, was used to print all currency denominations before 1991.<sup>8</sup> A second type of paper is called distinctive currency paper with security thread. This paper was first bought in production quantities in 1991 and was originally used for all denominations above the 2-dollar note; but it is now used only for 5-, 10-, and 20-dollar notes. The third type of paper, called new currency design paper with a watermark and security thread, was introduced in 1995 and is being used to print the redesigned 100- and 50-dollar notes that are currently in circulation and the newly redesigned 20-dollar note that is scheduled to be introduced into circulation in the fall of 1998. BEP plans to use this paper for newly redesigned 5- and 10-dollar notes next year.

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<sup>7</sup>H.R. Report No. 100-498, 100th Cong., 1st Sess., at 1177-1178 (1987).

<sup>8</sup>Security thread is a thin, clear, polyester strip placed in the paper during its manufacture. The thread contains an identifiable printed pattern and is not observable in reflected light, but it is observable in transmitted light and cannot be reproduced by copiers. Watermarks are images of the portrait on the currency paper and are made when the paper is formed by varying the density of the paper. The watermark is visible in transmitted light. Both security threads and watermarks are examples of anticounterfeiting features and are difficult for counterfeiters to reproduce.

Until recently, the manufacturing and purchasing of currency paper was relatively simple because only one type of paper was used to print all U.S. currency. Common paper manufacturing equipment was used in the process. BEP annually contracted for estimated quantities of paper needed and subsequently ordered it to print the Federal Reserve's currency requirements. Federal Reserve currency needs, in turn, were driven by the requirement to replace soiled currency removed from circulation and provide for increased currency demands.

The threaded currency paper and the threaded currency paper with a watermark were developed as anticounterfeit deterrents. According to the Secret Service, counterfeiting is becoming more of a problem as electronic technologies advance and become available to the public. In the past, counterfeiters had to have access to a printing press to counterfeit money. Today, counterfeiters use color copiers, digital scanners, personal computers, and ink jet color printers to replicate money. As a result, counterfeiters need less skill than before and have more access to machinery capable of counterfeiting, and the cost to counterfeit is much less. For example, the Secret Service said that in fiscal year 1995, the Federal Reserve discovered \$32 million in counterfeit currency that was passed on to the public, of which 0.5 percent was made with computer equipment. In fiscal year 1998, the Secret Service expects that \$45 million to \$50 million of counterfeit currency will be passed, and 40 percent of it is expected to have been made with the use of computer technologies.

Using more sophisticated paper is one method of making our currency more difficult to counterfeit. Other nations and BEP are also considering other materials, such as plastic, on which to print currency to increase its durability and anticounterfeiting features.

Throughout the world, currency paper is produced using two processes, fourdrinier and cylinder mold. In both processes, cotton fibers and other materials are mixed into a pulp with water and formed into a slurry, which is spread on a wire mesh where the water content is greatly reduced, and formed into paper. In the fourdrinier process, which is used by Crane for all BEP currency and is also used for the vast majority of all types of paper produced, including newsprint, the slurry is sprayed onto a large horizontal wire cloth. As the slurry moves along horizontally, water is drained through the wire cloth, and the fibers bind together into a sheet formation. In the cylinder mold process, used for many European and other nations' banknotes, a fine wire cloth is stretched around a cylinder, which serves as a strainer and rotates within a vat containing the pulp and

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water. As the cylinder is rotated, water is removed from the inside of the cylinder and a layer of fibers is formed on the outside.

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## Objectives, Scope, and Methodology

The overall objective of our review as stated in the 1997 Emergency Supplemental Appropriations Act was to analyze the “optimum circumstances for government procurement of distinctive currency paper.” However, because that objective was broad and numerous congressional parties were interested in this review, we met with the interested Members’ and committees’ offices to determine the specific issues they wanted addressed as well as approaches to address those issues. Although we identified a number of concerns and issues, they are all covered under the following three objectives:

- Have BEP’s efforts to encourage competition for procuring currency paper been effective?
- Have prices paid for currency paper been fair and reasonable and has the quality of the paper been ensured?
- Is there potential for disruption to the U.S. currency paper supply from BEP’s reliance on a single supplier?

To address these objectives, we reviewed federal procurement statutes and regulations and specific laws related to currency paper. We reviewed various indicators of the competitiveness of the currency paper market, such as the number of paper manufacturers who said they were capable of supplying currency paper to BEP, and the factors that make it difficult for them to provide currency paper. We also reviewed BEP studies of the currency paper market and obtained information from other federal agencies, such as the Secret Service and the Department of Defense (DOD).

To address the first two objectives, we reviewed BEP’s currency paper procurement files for paper contracts in effect from 1988 to 1997, analyzed how BEP bought currency paper during this period, and compared certain BEP actions with requirements in the FAR and applicable laws. We surveyed 30 domestic and foreign cotton paper manufacturers on their interests in supplying currency paper and factors that prevented them from competing for BEP currency paper contracts, and we surveyed other G-7 nations on how they procured banknote paper. We interviewed numerous officials of BEP, Treasury, the Secret Service, the Federal Reserve, Crane, and other agencies. We also interviewed several of the domestic and foreign cotton paper manufacturers that were included in our survey.

To help us analyze the fairness and reasonableness of prices paid by BEP for currency paper, we analyzed how BEP used audits of the single supplier's costs and proposals in its negotiations and evaluated whether BEP had an appropriate basis for determining the fairness and reasonableness of prices it paid for currency paper over the last 10 years. We toured paper mills of two cotton paper manufacturers, as well as BEP printing facilities in Washington, D.C., and Ft. Worth, TX, to observe how paper was produced and currency was printed.

To address the third objective, we interviewed officials at BEP, the Federal Reserve, and Crane; reviewed BEP's contingency plan for critical materials; and asked other G-7 nations what type of contingency reserves of banknote paper they maintained.

We did our work in accordance with generally accepted government auditing standards from July 1997 to August 1998. We requested comments on a draft of this report from the Chairman, Board of Governors of the Federal Reserve System; the Secretary of the Treasury; and the Chief Executive Officer of Crane. We received written comments from BEP's Acting Director that incorporated comments from the Treasury Department, written comments from Crane, and oral comments from the Federal Reserve. BEP's and Crane's comments are reprinted in appendixes VI and VII, respectively. Our summary of agency and Crane's comments and GAO's responses are discussed at the end of chapter 5. BEP and Crane also provided technical comments, which have been incorporated as appropriate in the report. A more detailed discussion of our objectives, scope, and methodology is contained in appendix I.

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# Several Factors Resulted in Limited Competition

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The optimum circumstances for the procurement of distinctive currency paper would include an active, competitive market for such paper where a number of responsible sources would compete for BEP's requirements. However, this is currently not the case because of the unique market for currency paper and some statutory restrictions. After over 100 years of relying on a single source, Treasury and BEP completed studies in 1983 and 1996 on what it would take to encourage competition for procuring currency paper, and BEP recently took steps to encourage competition in matters under its control. However, several paper manufacturers told us that they would compete for BEP paper contracts if additional changes were made, such as allowing foreign-owned companies to compete to supply currency paper and extending the length of contracts to more than 4 years. These changes would require existing statutory limitations to be amended. There are also other options for obtaining competition that are allowed under procurement laws and have been used by other federal agencies.

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## Competition Is the Optimum Circumstance for the Procurement of Currency Paper

When the government purchases common commercially available goods and services, obtaining competition is relatively easy. However, when the government purchases goods that serve only the government's needs, competition is less likely to occur. In currency paper procurements, obtaining competition is challenging, partly because there are few cotton paper manufacturers, currency paper is unique to the governments' needs, and a large investment in capital equipment is required.

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## BEP Has Identified Factors Inhibiting Competition

Factors that inhibited competition were identified in the 1996 Treasury/BEP currency paper study. These factors include (1) the cost of the initial capital investment to build or retrofit a plant to produce currency paper; (2) the short start-up period required to comply with specified paper deliveries; (3) the risks and uncertainties inherent in entering a limited, government-controlled market; and (4) the restriction on acquiring distinctive currency paper from foreign-owned or controlled companies contained in the Conte Amendment. Potential suppliers told BEP that it would take between \$20 million and \$150 million to build or retrofit the necessary plant and equipment to provide currency paper to BEP; and that because of the risks inherent in entering a limited, government-controlled market, some form of financial assistance from BEP would be necessary. The 1996 study also cited delivery requirements, usually requiring delivery starting at or shortly after contract award, as a significant inhibitor, given that manufacturers said it takes 1 to 2 years to become operational.



The 1996 Treasury/BEP study also found that the absence of a guaranteed minimum production commitment sufficient to cover the cost of constructing and equipping a plant was an inhibitor. Potential suppliers told Treasury/BEP they would require a long-term commitment to manufacture a minimum of 40 percent of BEP's requirements in order to begin production. According to BEP, Treasury currently has a study under way aimed at projecting the future demand for currency. The study is being done by representatives from Treasury, BEP, the Mint, and the Federal Reserve. The study is expected to be done by November 30, 1998.

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**BEP Did Not Obtain  
Competition for  
Currency Paper  
Contracts Awarded  
From 1988 to 1997**

BEP awarded five separate contracts to Crane for currency paper from 1988 to 1997. Two of these contracts, 95-23 and 97-10, were awarded to Crane on a sole-source basis. The other three contracts, 88-205, 91-18, and 93-14, were also awarded to Crane because BEP did not receive any other offers in response to its solicitations. Additionally, in accordance with the Conte Amendment, BEP was precluded from awarding a currency paper contract to foreign-owned or controlled firms. Although some matters affecting competition in the currency paper market are beyond BEP's control, BEP's solicitations for currency paper before 1997 did not attempt to encourage competition by using means within its control. As shown in table 2.1, some of BEP's solicitations contained a 1 or 2 year production period and required potential suppliers to start providing currency paper shortly after contract award. Although offerors can always request that financial assistance be provided, BEP did not offer to provide potential offerors financial assistance for capital equipment in its solicitations.

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**Table 2.1: Selected Terms of BEP Currency Paper Contracts/Solicitations for 1988 to 1997**

Terms of solicitation	Contracts/solicitations					
	88-205	91-18	93-14	95-23	97-10	97-13 <sup>a</sup>
Length of contract	2 years with two 1- year options	1 year with three 1- year options	1 year with four 1- year options	1 year with two 6- month options	2 years	4 years
Amount of start-up time provided	None	None	None	30 days	30-60 days	Up to 24 months
Sole source or Competitive Solicitation (CS)	CS	CS	CS	Sole Source	Sole Source	CS
Financial assistance	None offered	None offered	None offered	None offered	None offered	Proposals invited <sup>b</sup>

<sup>a</sup>This is a solicitation for which BEP plans to award a contract in December 1998.

<sup>b</sup>The solicitation contained a statement that offerors would be free to propose "innovative acquisition and financing arrangements."

Source: BEP 1988 to 1997 currency paper procurement files.

In 1997, BEP made significant changes to its solicitation for currency paper. Solicitation 97-13, issued in May 1997, provided for up to a 4-year contract with multiple award scenarios that allowed competitors to submit an offer on various-sized lots and it also provided up to 24 months for a start-up period, under certain award scenarios. Because of BEP's concerns about violating the 4-year limit on contracts for manufacturing currency paper, the solicitation provided that any required start-up period would be deducted from the 4-year production period. In addition, solicitation 97-13 also provided that BEP will consider "innovative acquisition and financing arrangements" proposed by offerors.

**Paper Manufacturers Report That Competition Continues to Be Inhibited**

Although BEP has taken actions to encourage competition in solicitation 97-13, such as providing for a longer contract performance period than in past solicitations and allowing a 24-month start-up time, some paper manufacturers responding to our survey told us there were other matters that prevented them from competing for the currency paper contract. Some manufacturers said they need an even longer guaranteed contract period, or financial assistance provided by the government, to recover the capital investment required to purchase the equipment to produce the paper. Several paper manufacturers also would like to be able to enter into joint ventures with a foreign paper manufacturer to produce currency

paper, but they are unable to do so because of the Conte Amendment, as interpreted by Treasury.<sup>9</sup>

Twelve of the 20 paper manufacturers responding to our survey of 30 worldwide firms said that they would be interested in supplying currency paper to BEP and are capable now, or would be in the near future, of supplying at least part of BEP's currency paper needs, but several matters prevent them from competing. Some of these matters are the same as those identified in BEP's 1996 currency paper study. None of the 12 interested paper manufacturers said that the size of the currency paper market would make it difficult for them to compete. Table 2.2 summarizes the factors inhibiting competition reported by the 12 paper manufacturers that said they would be interested in supplying currency paper to BEP.

**Table 2.2: Factors Affecting Competition Identified by 12 Paper Manufacturers Interested in BEP Contracts**

<b>Factors affecting competition</b>	<b>Number of paper manufacturers responding</b>
The length of BEP manufacturing contracts is too short to recover necessary capital investments.	9
The requirement that joint ventures with foreign firms must be 90 percent U.S. owned or controlled.	6
Lack of financial assistance by BEP for capital investment.	6
BEP's allowed start-up time is too short.	5
Security requirements for the manufacturing process.	3
The technology required to incorporate anticounterfeiting features in currency paper.	3
License or royalty payments to holder(s) of anticounterfeiting features.	3

Source: 1997 GAO survey of cotton paper manufacturers.

**Length of Currency Paper Contracts**

Nine of the 12 interested manufacturers said the performance period in BEP's currency paper contracts has been too short to recover the necessary capital investment. One paper manufacturer said that it is not possible to recover start-up costs in less than 5 years. A second domestic paper manufacturer told us the major reason it did not submit a proposal was that the contract period was too short to recover capital investment, and it believed it was unlikely that this situation could be improved. As a result,

<sup>9</sup>As discussed later in this chapter, Treasury interprets the Conte Amendment as precluding it from entering into any contracts for currency paper production with any entity that is more than 10 percent foreign-owned or controlled.

this paper manufacturer decided that continuing its investment in product development was too risky and decided not to submit a proposal.

According to another domestic paper manufacturer, the amount of capital investment necessary to meet BEP's requirements cannot be recovered through the price of paper sold to BEP over a 2- to 4-year contract. This paper manufacturer told us that if BEP extends the length of the currency paper contract to at least 10 years it would consider submitting an offer.

BEP's currency paper contracts have generally been for 1 to 2 years with three 1-year options, with the exception of the current solicitation 97-13, which has a performance period of up to 4 years. By law, the contract term to purchase U.S. currency paper cannot exceed 4 years. Additionally, U.S. money order paper contracts are for 5 years; and U.S. passport paper contracts are for 3 base years, with two 1-year options. Both passport and money order paper have security features (i.e., watermarks and security thread) similar to those of currency paper.

### Conte Amendment Affects Competition

The Conte Amendment provides that:

"None of the funds made available by this or any other Act with respect to any fiscal year may be used to make a contract for manufacture of distinctive paper for United States currency and securities pursuant to section 5114 of title 31, U.S.C., with any corporation or other entity owned or controlled by persons not citizens of the United States, or for the manufacture of such distinctive paper outside the United States or its possessions. This subsection shall not apply if the Secretary of the Treasury determines that no domestic manufacturer of distinctive paper for United States currency or securities exists with which to make a contract and if the Secretary of the Treasury publishes in the Federal Register a written finding stating the basis for the determination."<sup>10</sup>

Although the Conte Amendment itself does not specify ownership and control requirements, the accompanying Conference Report states that BEP may not enter into such a contract with an entity if 10 percent or more of the entity is owned or controlled by a group of foreign persons. In 1995, the report of the House Appropriations Committee<sup>11</sup> that accompanied the Treasury, Postal Service, and General Government Appropriations Act for fiscal year 1996 attempted to redefine the intended meaning of the Conte Amendment. The report stated that a domestic corporation or other entity is one "created under the laws of the United States or any one of its states or possessions, and . . . more than 50 percent of [which] is held by United

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<sup>10</sup>Part B of the Conte Amendment contains a similar restriction on passport paper.

<sup>11</sup>H.R. Report No. 104-183, 104th Cong. 1st Sess., at 22 (1995).

States citizen(s).” Treasury’s Office of General Counsel concluded in a March 1997 legal opinion that the 1995 House Appropriations Committee Report language cannot modify the constraints established in the Conte Amendment and the contemporaneous explanation of the provision in the 1987 conference report.

As part of our review, the House Appropriations Subcommittee on Treasury, Postal Service, and General Government asked us to review Treasury’s position that the Conte Amendment precludes BEP from entering into a contract for the manufacture of distinctive currency paper with an entity of which 10 percent or more is owned or controlled by a foreign company. Because the language designating a 10-percent limitation on foreign ownership or control is in the 1987 conference report and is not specified in the statute itself, Treasury’s interpretation is not mandated by the statute. Nevertheless, in the absence of language in the statute defining what constitutes foreign ownership and control, it is reasonable for Treasury to rely on the 1987 conference report as guidance for interpreting and applying the statutory language. Thus, we believe that Treasury’s interpretation of the restriction in the Conte Amendment is within its discretion.

Six of the 12 paper manufacturers we surveyed that were interested in supplying currency paper stated that their decisions not to respond to BEP solicitations had been influenced by the Conte Amendment restriction on foreign ownership. Three of the five foreign paper manufacturers saw this as an issue. According to one domestic manufacturer, the need to have 90-percent U.S. ownership limits a foreign entity from participating in a fashion that gives it any kind of financial incentive. One foreign manufacturer commented that as a foreign paper company, it would want a larger participation than the 10 percent currently allowed. Similarly, two domestic paper manufacturers commented to BEP in 1995 that the restriction on foreign ownership limited their capability to gain access to the only source of currency paper manufacturing expertise, particularly for security threads and watermarks, outside of Crane. Of the 12 interested firms responding to our survey, only 3 foreign firms said they can currently produce all 3 types of currency paper.

According to BEP, there are four major currency paper manufacturers that are internationally recognized in currency paper manufacturing and security. Only one of the four, Crane, is located in the United States. The other three, Portals Ltd., Papierfabrik Louisenthal, and Arjo-Wiggins, are located overseas. Portals Ltd., located in the United Kingdom, said it has

over 300 years of experience in supplying currency paper to the British government and 40 other countries. Papierfabrik Louisenthal, located in Germany, has supplied banknote paper to Germany since 1967. Arjo-Wiggins, located in France, has supplied banknote paper to France since 1789.

American companies that we surveyed said that under the 90 percent U.S.-owned or controlled interpretation, they have difficulty attracting the interest of foreign companies in a joint venture in which their expertise in currency production could be shared. Similarly, Portals, a foreign-owned paper manufacturer, told us it built a paper manufacturing facility in Hawkinsville, GA, in 1980 for two market segments: U.S. currency paper and high-security documents. According to Portals officials, they had been visiting BEP for a number of years regarding their interest in providing upgraded security features for U.S. currency paper. Portals officials stated that on the basis of the favorable reception from BEP, Portals built the Hawkinsville mill, which was capable of producing 2,500 tons of paper a year immediately and had the potential to move quickly up to 10,000 tons of paper a year. Ultimately, it was the passage of the Conte Amendment that caused Portals to sell the Hawkinsville mill in 1988, according to Portals officials.

Reliance on a single domestic supplier for currency paper is not unique to the United States. In our survey of the other G-7 countries, Germany, France, and Italy said they restrict their purchases of banknote paper to suppliers located in their countries. England and Canada said that they do not restrict their purchases of banknote paper only to suppliers located in their countries. However, England has historically always purchased its paper from Portals; and Canada competes both the manufacture of banknote paper and the printing of the notes. In Japan, the Japanese government is responsible for producing the paper and printing banknotes.

Secret Service officials strongly oppose any production of U.S. currency paper outside the United States because the Secret Service does not have authority to exercise security oversight of the personnel or plant facility in a foreign country. The Secret Service further stated that although it may be able to make agreements allowing for such oversight, a foreign country's law could preclude any investigative action or oversight by United States law enforcement personnel. The Secret Service also pointed out that the logistics of moving a critical material across borders via a variety of transportation modes would pose additional security risks. BEP security

officials told us that they share the same concerns. Secret Service officials pointed out that they did not believe that the percentage of foreign ownership would pose a security problem as long as the paper is produced on U.S. soil. Officials from both the Secret Service and BEP's Office of Security stated that because of their concern about a catastrophe, they would be in favor of having more than one supplier of currency paper, but they would strongly prefer that suppliers be located in the United States.

We agree that the Secret Service and BEP security officials have valid concerns about the manufacture of U.S. currency paper outside the United States. However, there are other components used for currency production in the United States that are supplied by foreign companies. For example, BEP prints U.S. currency on Swiss-designed sheet-fed Intaglio printing presses made by De La Rue Giori; and it buys the sheet currency inspection system and interim currency inspection system from Giesecke & Devrient, located in Germany. Currency ink is bought from Sicpa, a Swiss-owned company, which has facilities in the United States. Additionally, the Federal Reserve's high speed currency processing machines are made in Germany.

#### High Capital Equipment Cost

Six of the 12 interested paper manufacturers we surveyed said that given the short length of a currency paper contract, the high cost to finance capital equipment inhibits their ability to compete. Financing arrangements to assist these manufacturers could involve extraordinary measures, such as the government sharing in the cost of obtaining the capital equipment needed to build a currency plant by providing government-furnished property or by financing contractor acquired property (CAP).<sup>12</sup> According to one domestic manufacturer, a new supplier would incur significant capital expenditures in order to meet BEP's requirements, and the use of CAP would be essential to mitigate the capital investment needed. According to the 1996 Treasury/BEP study, the estimated capital investment needed to produce currency paper averaged \$40 million and ranged from a low of \$20 million to a high of \$150 million, depending on whether an existing mill could be retrofitted or a new mill needed to be built. Moreover, the Treasury/BEP 1996 currency paper study also suggested that government financing of potential contractors' equipment might be necessary to secure competition for currency paper.

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<sup>12</sup>Under CAP, the government would advance some or all of the funds needed to acquire or construct needed facilities. This advance would be factored into the evaluation of the price submitted by the offeror, and the government could recover its CAP payment over the life of the contract through decreased prices paid for paper it ordered and would have title to the property acquired. FAR allows the use of CAP as a means to achieve competition but also requires the elimination of any competitive advantage that this might create.

In July 1996, BEP posted a draft of solicitation 97-13 on the Internet stating that BEP would consider the feasibility of providing CAP. However, in May 1997, Treasury's former Director of Procurement decided to remove CAP from the solicitation because, in his view, in the form that it was being proposed by BEP, CAP would not have increased competition. The Treasury Procurement Director concluded that a 4-year contract, inclusive of start-up time, would not allow enough actual production time to generate sufficient revenues for the contractors to make it worthwhile for them to risk the substantial investment required to compete, even using CAP. Treasury recommended that BEP revise solicitation 97-13 to state that offerors would be free to propose "innovative acquisition and financing arrangements."

One interested paper manufacturer told us that the removal of CAP from the final solicitation and replacement with language that said BEP would consider "innovative acquisition and financing arrangements" left too much uncertainty about the capital investment issue for the manufacturer to proceed with a proposal. Two other interested paper manufacturers said they would still be interested in competing for the contract without CAP, if the length of the contract were to be extended to at least 5 years.

#### Length of Start-Up Period

The start-up period historically allowed by BEP is too short, according to five of the paper manufacturers we surveyed who were interested in competing for BEP currency paper contracts. One domestic paper manufacturer said that a short start-up period permits only the incumbent to submit an offer. This paper manufacturer further stated that the 24-month start-up period allowed by BEP in solicitation 97-13 would result in the forfeiture of 2-1/2 years of manufacturing, thus providing for less than the 4-year production period. The paper manufacturer further believes that the start-up period should be added to the manufacturing contract, i.e., a 2-1/2 year start-up period followed by a 4-year contract; otherwise, no paper company would invest in the specialized plant and equipment that are required to meet the government's security paper production needs before the contract is awarded. Another domestic supplier said that to prepare a facility for currency paper manufacturing would take 1 to 2 years. As noted previously, current law as interpreted by BEP restricts the total period for currency paper production contracts to 4 years.

Prior to 1997, BEP required the supplier of currency paper to provide currency paper immediately or shortly after contract award. The start-up



period for all distinctive currency paper in solicitation 97-13 is up to 24 months.

### Other Factors Mentioned by Some Paper Manufacturers

The requirements to pay a royalty license to use the data and process for insertion of the security thread, the security requirements for the manufacturing process, and the technology required to incorporate anticounterfeiting features in paper were also cited as factors inhibiting competition by 3 of the 12 paper manufacturers that were interested. One paper manufacturer filed a protest with BEP over the security thread license and other issues relating to the current solicitation. Specifically, the paper manufacturer stated that the solicitation places potential offerors, other than the incumbent, in the position of violating a patent held by Crane if they supply currency paper containing security thread made to the specifications outlined by BEP. According to this manufacturer, potential offerors are effectively precluded from providing distinctive currency paper with security thread and new currency design paper with watermark and security thread. In solicitation 97-13, BEP stated that it would provide the security thread as government-furnished material. However, BEP would have to negotiate with Crane to buy the security thread.

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### BEP Has Not Successfully Obtained Alternative Sources for Currency Paper

BEP's attempts to develop alternative sources in the 1960s and 1980s were not successful for a variety of reasons, including the following:

- One firm was unable to price its product competitively with BEP's traditional supply source for a portion of the currency paper requirement.
- BEP discontinued its use of paper that another firm was developing.
- The firm that had been developing paper that was discontinued needed technology from a foreign supplier to help it produce other types of paper that met BEP specifications.

In 1996, BEP studied the possibility of developing a second currency paper source. It concluded that two sources would probably be more costly than a single source, but it should continue to explore the marketplace through competitive solicitations to determine if there were viable alternative sources. The costs used in the 1996 study were based on an informal survey of paper producers that asked them how much capital investment would be required to prepare paper for BEP. For production costs, BEP assumed that a second producer would incur the same costs as Crane had. BEP's analysis showed that a second source, producing about 40 percent of BEP's needs, would increase costs of producing paper by at least

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\$21 million per year and possibly \$37 million per year, depending on the amount of capital equipment the second producer acquired. However, BEP's analysis did not reflect its subsequent decision to accept a higher profit rate with Crane to compensate for Crane's investment in capital equipment, such as it did on the two most recent contract actions with Crane.

Other agencies have found it advantageous to develop a second source. DOD officials told us that they have used a strategy referred to as dual sourcing to develop a second supplier in a sole-source situation for some weapon systems. For example, according to Air Force officials, dual sourcing was used to develop a second supplier to purchase engines for F-16 fighters.

Between 1967 and 1972, with few exceptions, the U.S. Mint has awarded the contracts for clad material<sup>13</sup> to one company. However, the Mint realized the vulnerability of having only one supplier, and it attempted to develop additional sources by awarding developmental contracts to firms that were interested in competing for future clad material contracts. However, the vendors selected were unable to produce the material at an acceptable level of quality, according to Mint officials. Although the Mint did not have much success with developmental contracts, it currently has more than one supplier, according to Mint officials. Since 1993, the Mint has purchased clad material from two vendors that share 50 and 45 percent of the contract, respectively. The other 5 percent of the contract is divided between two developmental contractors. Mint officials told us that they did not have a developmental contract with the Mint's current second supplier, but the second supplier responded to a competitive solicitation issued in 1993. Mint officials said that having two suppliers is better than one because competition helped prevent prices of clad material from rising as rapidly as they would have if there had not been any competition.

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<sup>13</sup>Clad material consists of different metal alloys bonded together and is used to produce 10-cent, 25-cent, and 50-cent coins.

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# BEP Has Ensured Quality but Has Not Demonstrated That It Has Obtained Fair and Reasonable Prices

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Although the long-term relationship between BEP and Crane has historically provided quality currency paper, BEP did not generally demonstrate that it obtained fair and reasonable prices for the contracts, options, and extensions awarded between 1988 and 1997. To the contrary, the evidence available in the contract files showed that BEP sometimes paid what it believed to be too high a price when buying currency paper. BEP's contracting officers recommended accepting prices that they could not determine were fair and reasonable with respect to five contracting actions because there was no other source for currency paper. BEP would not accept Crane's proposed prices for half of the 10-year period covered by our review. Instead, BEP agreed to pay Crane's proposed prices as interim prices. The dispute was eventually settled by an arbitrator. The major disagreement between BEP and Crane involved profits until recently, when BEP increased its negotiated profit objectives.<sup>14</sup>

In determining whether Crane's proposed prices were fair and reasonable, BEP relied primarily on audits of Crane's proposals. However, BEP has not obtained audits of Crane's cost estimating system or post-award audits of some contracts until recently, made little use of other cost analysis techniques in the earlier contracts in our sample, and made very little use of price analysis. Further, some of BEP's procurement practices relating to the quantities of paper ordered and its failure to obtain royalty-free rights to the security thread caused, or may have caused, the government to pay more for currency paper than it should have.

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## BEP Has Generally Received Quality Paper

According to BEP officials, Crane has been a reliable source for paper. BEP and Crane officials said that a paper delivery to BEP has not been missed in over 100 years. BEP officials also said that the overall quality of the currency paper supplied by Crane has been good.

In reviewing the files for currency paper contracts in effect from 1988 to 1997, we found only two references to problems with the paper that Crane supplied to the government during this period. The first problem involved bonding of the security thread to the paper. This problem began in 1991 and was due to a change in the adhesive system that was mandated by an environmental ruling in New Hampshire, where the thread was produced. BEP gave Crane a waiver to the contract until the problem was solved in 1994. According to BEP, the resolution of this problem created a second problem, which involved the inability of Crane to meet BEP's standards for the folding endurance for the security threads. The folding endurance

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<sup>14</sup>Profit objective is the level of profit that BEP hoped to attain during negotiations.

standard specifies how many times paper can be folded before it tears and is a measure of durability. The problem occurred in 1994, after the thread bonding adhesion was changed, and it was brought to BEP's attention by Crane. BEP granted Crane a waiver from the folding endurance standards for the contract in effect at the time (95-23) and lowered the standard for the subsequent contract (97-10).

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## **BEP Used Limited Cost and Price Analysis**

Of the five contracts awarded from 1988 to 1997, two were awarded on a sole-source basis to Crane. For the other three contracts, BEP issued competitive solicitations. Crane was the only company to submit an offer. In the absence of competition, BEP had to rely on cost and price analyses to evaluate proposed prices to determine if the prices paid for currency paper were fair and reasonable. Price analysis is to be used to verify that the overall price offered is fair and reasonable in comparison with current or recent prices for the same or similar items. Examples of price analysis include comparing proposed prices with (1) prices obtained for similar items through market research, (2) parametric estimates such as dollars per pound, and (3) previous prices.

Under the Truth in Negotiations Act,<sup>15</sup> offerors are required to submit and certify cost or pricing data to support the reasonableness of individual cost elements, under certain circumstances, when adequate price competition does not exist. Separate cost elements and profits are evaluated to determine how well the proposed costs represent what the costs of the contract should actually be, assuming reasonable economy and efficiency. Examples of cost analysis include the comparison of costs proposed for individual cost elements to historical costs and the evaluation of the need for and reasonableness of proposed costs. Contracting officers are to determine whether a proposed price is fair and reasonable on the basis of both a cost analysis to ensure the reasonableness of individual cost elements and a price analysis to ensure that the overall price, including profit, is fair and reasonable. The contracting officer's determination is a judgment based on the results of the cost and price analyses.

For the most part, BEP limited its cost analysis techniques to audits of Crane's price proposals. The audits were done by the Treasury Inspector

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<sup>15</sup>The Truth in Negotiations Act, codified at 41 U.S.C § 254b for civilian agencies, provides for a prospective contractor to submit cost or pricing data in connection with the negotiation of certain contracts when adequate price competition is not obtained. The act requires the prospective contractor to certify that the data are accurate, current, and complete and provides for a possible price reduction when the data are found to be inaccurate, incomplete, or noncurrent.

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General (IG) for contracts awarded before 1992 and by the Defense Contract Audit Agency (DCAA) for contracts awarded after 1992. The audits generally consisted of a review of the proposed costs and a test of the reliability of the underlying data and records supporting the proposed costs, as well as the accounting principles used in developing the proposal. In several of the audits, the auditors qualified their work because of Crane's cost accounting system. For example, for contract 88-205, option 1, the auditors observed that standard costs used in estimating were not adjusted for actual variances, which made them less reliable as a basis for estimation.

BEP generally obtained audits of Crane's price proposals, but it did not conduct a comprehensive price analysis for the five contracts we reviewed. BEP procurement records showed that it did not analyze the changes in prices from one contract to the next and did not compare proposed contract prices to the prices paid for similar items by other government agencies or countries. It did not always review cost trends, such as product yield rates, material prices, and proposed escalation over time, for the earlier contracts in our sample. More specifically, according to BEP's procurement records:

- Audits of proposed costs were obtained for the first three contracts (88-205, 91-18, and 93-14) included in our review, and this information was used to evaluate Crane's proposed costs; however, additional cost or price analysis was not done for these contracts. BEP stated that it did not have time to do a cost analysis for contract 91-18.
- Audits of proposed costs were also obtained for contract 95-23, and this information was used to evaluate Crane's proposed costs. BEP said that it performed additional cost and trend analysis.
- For contract 97-10, BEP again used audit results and did more thorough cost analysis than it had previously done. BEP also did limited price analysis; for example, it compared proposed prices to prices under its existing contracts.

A BEP contracting officer said she attempted to obtain prices paid for currency paper from some other governments by telephoning them, but they said they were not willing to share this information due to its proprietary nature. We recognize that other governments may consider such information to be proprietary or be unwilling to share the information with an agency contracting official over the telephone. However, given the interest of the government in achieving a fair and reasonable price in this unique market, other more official and formal

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efforts to obtain the information, such as inquiries from the Secretary of the Treasury or the State Department, might be more successful.

BEP procurement officials said they did not attempt to compare the prices proposed for currency paper with the amounts the U.S. Postal Service paid for money orders or the Government Printing Office paid for passport paper, because the products were different. Although we agree that the products are not identical, they are similar and they are bought competitively. The passport paper is cotton and pulp based, has security thread, and contains a watermark. Money orders also have security threads and watermarks, but they are made from wood pulp instead of cotton. Nonetheless, although comparisons among these types of products would not in themselves have provided a basis for definite conclusions, they may have provided some insight for assessing cost and price trends over time and in demonstrating the effects of competition on prices.

The only other analysis used by BEP was for negotiating contract 97-10, and it included an analysis of the effects of changes in quantities ordered on Crane's production costs. Similar analyses would have been helpful for the other contracts we reviewed. In accordance with section 9003(b) of the 1997 Emergency Supplemental Appropriations Act, the Secretary of the Treasury was required to certify that the price for contract 97-10 was fair and reasonable and that the terms of the contract were customary, appropriate, and in compliance with procurement regulations. The Secretary delegated this determination to the Director of BEP, who made these certifications on September 3, 1997.

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**Results of BEP's**  
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The five contracts we reviewed from 1988 to 1997 and their options and extensions resulted in 17 contract actions.<sup>16</sup> The prices for the contracts and options are listed in appendix V. For these 17 actions, BEP determined the price to be fair and reasonable for 4, but it was not able to determine the price to be fair and reasonable for 5. BEP did not reach agreement on price for the remaining eight contract actions. For these eight, BEP used interim prices, which were later finalized and reduced by an arbitrator.

For the eight contract actions that were finalized by an arbitrator, BEP and Crane were unable to reach agreement on (1) royalties paid to Crane's affiliated subcontractor that produced the security thread, (2) allocation of commercial sales commissions to government contracts, (3) allocation of

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<sup>16</sup>Three contract actions, relating to contract 95-23, contained an unpriced line item at the time of contract award. This line item was subsequently priced and considered to be fair and reasonable. We did not include this line item as a separate contract action.

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legal and consulting costs, and (4) profit. The arbitrator concluded in January 1995 that there was no common control of the affiliated company producing the thread, the allocation of Crane's sales commissions to government contracts was not appropriate, and Crane's allocation of legal and consulting costs was proper. The arbitrator also decided that Crane was entitled to higher profits than BEP had been willing to accept because of Crane's needs for a fair return on its capital investments made to produce paper with less labor. The arbitrator commented that had the DOD weighted guidelines been used, the government's and Crane's positions would have been closer. The DOD guidelines provide a structured approach to develop a contract profit objective, and they emphasize the usefulness of facilities' capital for buildings and equipment used by the contractor to improve productivity or to provide other benefits, such as improved reliability.

The arbitrator decided that the settled price should be \$212 million, which was \$9.7 million (4.4 percent) lower than the interim payments that BEP had made to Crane. According to the arbitration settlement, billings for the subsequent 5 months of one contract action were also settled. During this period, BEP paid \$2.1 million more in interim payments than the settled amount, bringing the total amount returned to BEP to \$12.7 million.

For 5 of the 17 contract actions, BEP was unable to determine the prices to be fair and reasonable. However, it accepted prices for these five contract actions because, according to the BEP contracting files, (1) there was no other source of paper and (2) the Federal Reserve's currency requirements could not be met if the contract with Crane were not awarded. The major reason why BEP was not able to determine the prices to be fair and reasonable was that BEP contracting officers questioned the profit proposed by Crane. In general, BEP contracting officers were not willing to accept Crane's proposed profit levels until after the award of contract 95-23, when BEP modified its profit objective by adopting the DOD weighted guidelines. BEP's application of these guidelines resulted in BEP's adoption of a higher profit objective.

Crane told us that the use of the DOD guidelines resulted in a fair return on the investment made in capital equipment with a minimum amount of labor costs.<sup>17</sup> BEP's contract files did not indicate that any analysis was

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<sup>17</sup>The specific profit percentages negotiated for the BEP contracts are proprietary information. Crane asked that we not disclose that information, other than to report that its negotiated profit rate was 19.6 percent in 1988, 11.8 percent in 1991, and 21.5 percent in 1995. Crane would not authorize us to disclose the negotiated profit percentages for the other years in our review period, nor would it provide the actual profit rates earned on currency paper.

done to demonstrate that on BEP contracts for which the DOD guidelines were used to analyze profits, including contract 97-10, the profits were beneficial to the government in that prices would be reduced, labor costs would be reduced, or the government would otherwise benefit.

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## **BEP Had Incomplete Audit Information**

Although BEP primarily relied on audits of Crane's proposals to determine if the prices proposed were fair and reasonable, two factors qualified the usefulness of these data. First, in a 1994 post-award audit of a cost proposal, DCAA identified about \$3 million in over-pricing attributed to Crane's accounting system. The auditors observed that Crane's cost accounting system was based on standard costs that were not periodically adjusted to reflect actual costs. Also, in several audit reports covering the proposals for contracts we reviewed, DCAA reported that it had not been asked to review the contractor's budgeting/estimating system.

A second factor was the lack of post-award audits of the contractor's costs for contracts 95-23 and 97-10. In post-award audits, DCAA attempts to verify whether the costs proposed were based on accurate, complete, and current data as required by the Truth in Negotiations Act. BEP officials said that they asked for DCAA audits of the contractor's budgeting/estimating system and post-award audits of contracts 95-23 and 97-10 in May 1998. BEP officials said they did not ask for these audits earlier because the contractor's staff who would be responsible for working with the DCAA auditors were engaged in preparing cost proposals, and BEP did not want to interfere with these activities.

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## **Uneconomical Procurement Practices**

Although unrelated to the issue of whether the government paid fair and reasonable prices for currency paper, which is based on the judgment of the contracting officer on the prices proposed for given quantities of supplies, we also found that certain BEP procurement practices contributed, or could have contributed, to higher than necessary currency paper costs. The practices included ordering inconsistent quantities of paper, understating quantities expected to be ordered, and not obtaining royalty-free data rights for security thread used in U.S. currency.

According to a former Crane official we interviewed, BEP did not order consistent amounts of the paper under the contracts. Consequently, Crane was not able to maintain a steady production schedule and had to have more equipment than necessary to produce paper to meet BEP's inconsistent ordering. This official said there were times when Crane's



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paper mill would be operating only a few days a week due to lower-than-usual orders for paper; but at other times, the mill would have to operate at full capacity for weeks in order to fulfill a larger-than-usual BEP order. Similarly, the BEP contracting officer noted in an October 1996 trip report on a visit to Crane that Crane requested BEP to commit to leveling out production orders. The contracting officer reported that Crane had experienced four layoffs that year that were costly and could result in the loss of skilled workers.

The five contracts awarded from 1988 to 1997 were either fixed-price requirements contracts or indefinite delivery/indefinite quantity contracts. Under either type of contract, the government provides an estimate of the quantities of paper to be bought, and the contractor proposes a price-per-sheet of paper based on that quantity. Because of the relatively high fixed costs in producing currency paper, primarily due to high equipment costs, a higher volume equates to a lower unit cost as the fixed costs are spread over more units. Because paper contracts are awarded on a price-per-sheet basis, government orders in excess of the estimated quantity would be expected to result in lower per sheet actual costs and increased profit per sheet.

For example, under the base period for contract 88-205, the contractor provided a price of \$.1254 per sheet, based on an estimated quantity of 360 million sheets. BEP actually bought 435 million sheets under this contract, which we estimate to have contributed about \$1.5 million in additional contract profits. Other contracts we reviewed also had differences between the estimated contract quantities and the actual orders.

A third issue involves BEP's failure to obtain royalty-free data rights to the security thread used in currency and the process used to insert the thread. Crane, with its affiliated company, Technical Graphics, Inc., holds patents for the thread and the process used to insert the thread in the currency paper. Although this thread is unique to U.S. currency, a BEP official said that the government does not have the patents or a royalty-free license to use the thread because the government never directly paid for their development. The BEP official said that in the early 1980s, Crane approached BEP with an idea for the thread. BEP encouraged Crane to develop it but did not enter into a research and development contract with Crane to develop the concept. A BEP official observed that a research and development contract would have been the vehicle for the government to obtain an interest in the concept. According to BEP officials, Crane used its

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own funds to develop the thread and insertion process, so Crane is entitled to the patents. BEP officials also said that the government indirectly paid for much of Crane's development cost.<sup>18</sup> They said the government cannot obtain the royalty-free data rights unless it contracts to do so.

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<sup>18</sup>We were able to identify about \$2.4 million of research and development costs that Crane proposed and BEP accepted as independent research and development to develop the security thread and the process used to insert it into the currency paper. However, the extent to which other BEP funds may have been included in Crane's contract costs is unclear because Crane did not segregate its independent research and development costs by project.

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# BEP Is Now Building an Inventory of Currency Paper as a Contingency

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Although there have not been any disruptions in the supply of currency paper for the last 119 years, BEP has not been in a good negotiating position and has been vulnerable because it did not have a second source for currency paper or have a reserve inventory of currency paper. The Conte Amendment allows BEP to contract with a foreign entity if a domestic source is not available, thus providing some relief if the current supplier were to encounter a catastrophic incident and be unable to supply currency paper. However, BEP officials told us that a foreign source would require at least 3 months to prepare, produce, and ship watermark and threaded paper and between 1 and 2 months to deliver currency paper without watermarks. BEP is in the process of establishing a 3-month contingency supply of currency paper, which BEP expects to be completed in 1999.

Although the longstanding single supplier has been a reliable source of currency paper, the combination of relying on a single supplier and not having an inventory placed BEP in a weak negotiating position and presented some risks. In BEP's price negotiation memorandums for contracts 88-205 and 95-23, BEP's contracting officers stated that despite the fact that they considered Crane's price to be too high, BEP awarded contracts to Crane at the prices proposed by Crane in order to ensure a continuous supply of currency paper.

Furthermore, in a meeting between BEP and Crane to negotiate contract 95-23, the parties could not reach agreement over price. The former Chief Executive Officer of Crane said that "BEP would just have to run out of paper," according to a memo written by a Treasury official dated June 21, 1995. Although BEP and Crane were eventually able to reach agreement, the former Chief Executive Officer of Crane told us that in June 1995 he told Treasury officials, in effect, that he would not agree to another paper contract and that BEP would have to run out of paper. He said that this statement stemmed from issues surrounding the arbitration settlement. He said that a few months earlier, Crane and BEP signed the agreement to accept the terms of the arbitration settlement; however, BEP was still questioning the prices covered by the agreement. According to the former Crane official, the only leverage Crane had to settle with BEP was to not agree to enter into any new contracts.

Under the Conte Amendment, if the Secretary of the Treasury determines that no domestic source of currency paper exists in the United States, the requirement for currency paper to be produced in the United States and the prohibition against the purchase of currency paper from a supplier

owned or controlled by a foreign entity would not apply. In order to procure currency paper from a foreign supplier, several actions would need to be taken. First, under the Conte Amendment, a written finding by the Secretary of the Treasury justifying the basis for the determination that no domestic manufacturer of currency paper exists must be published in the Federal Register. According to BEP officials, this could be done within a matter of days. Second, BEP would need to contract with Crane to acquire the security thread so BEP could provide the thread as government furnished property. Finally, it would take the foreign paper manufacturer about 3 months to start providing BEP with the currency paper, according to BEP officials.

To its credit, BEP recently decided to replace its “just-in-time” approach to maintaining an inventory with a 3-month contingency supply of currency paper. According to its 1996 strategic contingency plan for critical materials, BEP determined that a 3-month contingency supply of currency paper would be adequate. BEP officials said that they will have the inventory built up by 1999. According to the Federal Reserve, it maintains a 40-day supply of finished currency at each of its reserve banks, which would also provide some additional time to bring on another source of currency paper if this were needed.

In our survey of other G-7 nations, we were told that the amount of banknote paper maintained in reserve ranged from 1 month in England and Japan to 2 to 3 months in France and Italy. In Canada, the banknote printers are responsible for procuring their own banknote paper. Germany would not provide information on its inventory. Additionally, like the United States, none of the other G-7 nations maintain a second supplier of banknote paper to protect against possible disruptions in the supply of their banknote paper.

BEP appears to be ahead of achieving its goal to have a 3-month reserve for each denomination. According to BEP, as of May 1998, it has a 3-month reserve for each individual denomination with the exception of the \$20 denomination, which has been recently redesigned. BEP officials anticipate reaching the 3-month reserve for the newly designed \$20 note during calendar year 1999.

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# Conclusions and Recommendations

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Obtaining competition in currency paper procurement is challenging, partly because of the uniqueness of the currency paper, which requires a relatively large investment in capital equipment. In addition, special statutory provisions govern the acquisition of currency paper that provide a 4-year limit to contracts for the manufacture of currency paper and that it be manufactured in the United States, and prohibit the purchase of currency paper from foreign-owned or controlled entities. Although most BEP solicitations issued before 1997 were competitive, it was not successful in obtaining competition because no firm other than Crane submitted an offer. BEP efforts in the 1960s and 1980s to establish a second source for currency paper also were not successful, for similar reasons.

We recognize that there are some uncertainties to the competitive process, even if the existing problems are solved. For example, 12 paper manufacturers told us that they are capable now, or would be in the near future, of supplying at least part of BEP's currency paper needs if further changes are made.

However, we cannot say with any certainty how many, if any, would submit an offer; whether they would be price-competitive with Crane; or if the quality of paper and reliability of delivery would be maintained. In addition, 5 of the 12 paper manufacturers are foreign-owned and are precluded from receiving a contract award under current law.

It is uncertain whether the government can successfully develop a second domestic source for future paper needs, primarily because it is unknown how prices would change. Prices might increase if more than one supplier were used. For example, if the same quantity of paper is obtained from two or more suppliers, each with substantial capital investments, the unit price for paper is likely to be higher from each. Therefore, although having a second supplier could lessen the government's vulnerability to a disruption in supply, having two suppliers could result in an increased cost to the government. On the other hand, a single supplier has less incentive to be efficient or to keep prices and costs to a minimum than suppliers who have to compete with each other, and DOD has reportedly benefited from having a second source in some instances.

In its most recent currency paper solicitation, BEP has taken several actions to encourage competition, including providing up to 24 months for potential suppliers to start production for currency paper with additional security features and providing for longer contract performance periods, within the statutory 4-year limit. However, if these steps are not sufficient

to encourage offers from additional suppliers, additional actions to promote competition by Treasury and BEP may be appropriate. Given the current statutory constraints; previous efforts to study this problem, as well as Treasury's ongoing study of future currency demand, which could affect the economic viability of having more than one currency paper supplier; and uncertainties discussed in our report, we believe it is premature to recommend specific steps at this time. Moreover, additional insight on this issue should be available after Treasury completes its ongoing study on future currency demand and as other information becomes available, such as the currency paper prices BEP obtains under its current solicitation and any changes in legislation affecting currency paper procurement that might occur.

BEP has not generally been adequately prepared to be in a position to know what it should be paying for currency paper because, until recently, it has done only limited cost analysis and has not used price analysis. BEP could improve some aspects of its currency paper procurements. The evidence demonstrates that BEP (1) lacked an aggressive effort to encourage Crane to develop an acceptable cost accounting system; (2) did not always arrange for post-award audits and audits of the supplier's cost estimating system; (3) did not include data and analyses in the procurement record that demonstrated the benefit that BEP was to receive when it approved profits that were to recognize or provide an incentive for capital investment; (4) conducted limited analysis of supplier costs and prices, in the context of the worldwide market for currency paper; (5) failed to accurately estimate the amount of paper it needed to procure and ordered inconsistent amounts of paper; and (6) did not take action to arrange for royalty-free access to security thread. In addition to actions to correct these problems, recent efforts to establish a 3-month inventory of currency paper should provide an additional tool to help BEP better ensure that fair and reasonable prices can be achieved.

As noted above, BEP has taken several actions to encourage competition. For example, BEP extended the period for potential suppliers to start production for currency paper with additional security features and provided for longer contract performance periods than it had in the past. However, BEP must acquire currency paper within the existing legal framework. According to BEP, the legal framework requires that offerors' start-up period be included in the 4-year contract period, thus reducing the manufacturing period and limiting the effect of BEP's actions. According to BEP, the 4-year statutory limit on contracts was created in 1916 to extend the contracts beyond the 1-year statutory limit then in effect, in order to

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better ensure a reliable supply of materials. BEP's options for encouraging competition could be further enhanced if Congress lengthened the 4-year limit for currency paper contracts to give potential offerors a longer time to recover their capital investments.

If efforts to obtain competition continue to be unsuccessful, BEP's capacity to achieve fair and reasonable prices could be enhanced through congressional action. BEP's strategy options could be further strengthened if Congress provided additional authority by modifying the Conte Amendment's prohibition on procuring currency paper from foreign-owned or controlled suppliers to permit the Secretary of the Treasury to do so on a temporary basis if it is determined that currency paper is not available from a domestic source at fair and reasonable prices. Such a modification could provide additional leverage for the government in its negotiations with the current supplier, or any future domestic supplier(s), and increase the likelihood that fair and reasonable prices can be achieved.

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## Recommendations to the Secretary of the Treasury

To strengthen BEP's capacity to ensure fair and reasonable prices, we recommend that the Secretary direct BEP to

- ensure that the contractor maintains acceptable cost accounting and estimating systems for future contracts and that they are periodically audited;
- arrange for post-award audits of the contractor's costs;
- include data and analyses in the currency paper procurement record that demonstrate the benefits the government is to receive when it approves profit levels that are aimed at recognizing or providing an incentive for capital investments; and
- to the extent possible, make more extensive use of price analysis to determine the fairness and reasonableness of prices, including the collection of data from foreign countries on their currency prices and data on similar supplies purchased by other agencies, such as paper for passports and money orders.

To further enhance opportunities for other paper manufacturers to offer to provide currency paper to the government and to obtain offers that represent the best value to the government for the paper, we also recommend that the Secretary ensure that all future currency paper procurements reflect the expected amounts of paper needed and orders against contracts are for consistent amounts. This would allow the

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supplier(s) to maintain a steady production level and stabilize workforce levels. Finally, we recommend that the Secretary ensure that the government obtains royalty-free data rights to any future security measures incorporated into currency paper.

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## Matters for Congressional Consideration

To further assist the Secretary in obtaining competition from domestic sources, Congress may wish to consider lengthening the 4-year limit for currency paper contracts to give potential offerors a longer time to recover their capital investments. If adequate price competition among two or more suppliers can be achieved, concerns over whether the prices paid are fair and reasonable should be reduced.

Finally, because BEP's past efforts to encourage domestic competition for currency paper have been unsuccessful and future efforts are uncertain, and because BEP has not always been able to ensure fair and reasonable prices from the current supplier in some past procurements, additional authority may be necessary to protect the government's interests in obtaining currency paper. Specifically, Congress may want to consider revising the Conte Amendment, which allows the Secretary of the Treasury to obtain currency paper from a foreign-owned source only if no domestic supplier is available, to permit the Secretary to authorize obtaining currency paper from a foreign-owned source on a temporary basis if it is determined that no domestic supplier will provide paper at fair and reasonable prices. Such a provision should improve the likelihood that fair and reasonable prices could be obtained.

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## Agency and Crane & Co. Comments

We provided copies of a draft of this report for comment to the Chairman of the Board of Governors of the Federal Reserve System, the Acting Director of BEP, the Secretary of the Treasury, and the Chief Executive Officer of Crane. On July 29, 1998, the Assistant to the Board of Governors of the Federal Reserve System provided oral comments on our draft report. He said the Federal Reserve considered the analysis and recommendations to be reasonable. We also received written comments from the Acting Director of BEP, dated July 29, 1998, which are reprinted in appendix VI; and we received written comments from Crane dated July 28, 1998, which are reprinted in appendix VII. According to BEP officials, the BEP comments included input from the Department of the Treasury.

Finally, in a meeting with us on July 29, 1998, BEP provided a number of oral technical clarifications to our report that we made where appropriate.



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BEP Comments

The Acting Director of BEP stated that our report does not recognize that BEP complied with the FAR in the award of the five contracts we reviewed and provided comments on our recommendations. We did not make a comprehensive assessment of BEP's compliance with FAR in connection with the five contracts we reviewed and thus are not in a position to make an overall statement on BEP's compliance.

Our draft report included recommendations that BEP (1) consider amending solicitation 97-13 and future solicitations to provide financial assistance if deemed to be economically advantageous to the government; and (2) consider excluding Crane from some or all of BEP's currency paper requirements, as an example of a strategy to establish an alternative source. In its comments, BEP endorsed the idea of providing financial assistance but did not agree with amending solicitation 97-13 because it believes solicitation 97-13 provided for financial assistance. In addition, BEP said that Treasury is currently studying the future demand for currency, and once the study is completed, BEP will be in a better position to assess the cost reduction potential associated with developing additional suppliers. BEP also disagreed with our recommendation that Treasury consider excluding Crane from some or all of BEP's currency paper requirements. BEP said that excluding Crane from competing for all of its requirements was not feasible because of the lack of an alternative domestic source; and excluding Crane from part of its requirements would not be practical or economically feasible, citing a previous determination that the price for currency paper could increase significantly due to the high capital investment cost for a potential new supplier.

After carefully considering BEP's comments as well as reconsidering the uncertainties we identified in our draft report, we agree with BEP that amending solicitation 97-13 to offer financial assistance and excluding Crane from all of its requirements could create difficulties for BEP in meeting its responsibilities to ensure an adequate supply of currency paper. We also agree with BEP that it should be in a better position to evaluate the feasibility of establishing additional suppliers after Treasury completes its ongoing study of future currency demand, which Treasury expects to be done soon. In fact, our draft report recognized that future currency paper demand was one of the factors that needed to be considered in deciding on the feasibility of additional suppliers.

Accordingly, we deleted our recommendations to the Secretary aimed at encouraging competition to reflect BEP's concerns, the uncertainties identified in our report, and because of Treasury's ongoing effort to

project future currency demand. However, we believe that future consideration by Treasury of additional measures to encourage competition may be appropriate after it finishes its study of future currency demand for a number of reasons. First, significant changes in future currency demand could affect the economic feasibility of establishing other suppliers. Second, BEP's statement that it has determined that establishing another supplier would not be economically advantageous appears to be based on its 1996 currency paper study, which was done before BEP accepted higher prices for newly designed currency paper under contract 97-10; higher prices could affect the conclusions Treasury reached in its 1996 study. Third, Treasury's report on its 1996 currency paper study did not fully address the economic feasibility of establishing a second supplier under different scenarios that would be possible if existing restrictions on the contract period or percentage of foreign ownership and control were changed.

Regarding our recommendation to ensure the contractor maintains acceptable cost accounting and estimating systems, BEP said that it has audited the contractor's cost accounting practices and will continue to do so. However, on July 29, 1998, BEP officials told us that they still had not obtained an audit of Crane's estimating system. We believe that this should have been done earlier because the estimating system helps to ensure that cost proposals are based on reliable and consistent data.

In reference to our recommendation to arrange for post-award audits for the contractor's costs, BEP said that it had requested audits and that ongoing IG and DCAA investigations and audits occasionally interfered with timely post-award audits. We believe BEP should continue to pursue these audits because past efforts to follow up on obtaining post-award audits have not always been timely and because they help protect the government's interests.

With respect to our recommendations that solicitations reflect expected paper needs and that orders be evened out, allowing the supplier to maintain a steady production level, BEP agreed that improvements were needed and says it has taken corrective actions to ensure that the quantities bought under contract 97-10 represent actual requirements. We believe these actions are a step in the right direction and should be continued in future orders of currency paper.

BEP disagreed with our recommendation that it make more extensive use of cost and price analysis. BEP pointed out that in its two most recent

contracts, it had applied a number of cost analysis techniques. Our draft report recognized that BEP had done more cost analysis on contract 97-10 than had been done in previous contracts. However, BEP did not do adequate price analysis for any of the five contracts we reviewed, including 97-10, and did not do adequate analysis to support the profit levels it accepted. Accordingly, we modified our recommendation to address the need for greater analysis of proposed profit levels. Regarding our recommendation to collect pricing data from foreign countries, BEP said it would continue to try to obtain foreign country currency paper data. We added some language to the report to clarify how this might be done. With respect to the related suggestion that BEP collect pricing data on similar supplies purchased by other agencies, such as passport and money order paper, BEP said it believed comparison of currency paper prices to passport and money order paper would not produce any meaningful information. BEP said these papers are different from currency paper. Our report recognizes that although comparisons of these types of papers would not provide a basis for a definitive conclusion, they may provide some insight for assessing pricing trends.

BEP said it agreed with our recommendation to obtain royalty-free data rights to future security measures. BEP pointed out that the cost of such royalties for the security thread is less than 0.2 percent of the cost of the currency paper contract. However, BEP did not address the effect these patents had on its 1997 competitive solicitation or could have on future solicitations. As discussed in chapter 2, several paper manufacturers stated that the requirements to pay a royalty license to use the data and process for insertion of the security thread made it difficult for them to compete. One paper manufacturer filed a protest with BEP over the security thread license and said that the solicitation places potential offerors in a position of violating a patent held by Crane if they supply currency paper containing security thread made to BEP's specifications. In response to this protest, BEP agreed to provide the security thread as government-furnished property.

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**Crane & Co. Comments**

Crane provided very lengthy comments on many of the issues addressed in this report. Our specific responses to the comments are included in appendix VII. In general Crane said that although it agreed with many of our factual findings, it disagreed with most of our recommendations and one of our matters for consideration of Congress. Crane also suggested specific technical changes to clarify our report that we have made where appropriate.

In objecting to our recommendations that BEP and Treasury take further steps to encourage competition in the supply of the nation's currency paper, Crane said that they have already been adopted by BEP and no further action was necessary. Crane specifically objected to the recommendations in the draft report that BEP further consider options for providing financial assistance to other potential suppliers and that BEP consider excluding Crane from all or some of its currency paper requirement to encourage participation by other potential suppliers. While these strategies are permitted under law, Crane said that they would result in higher costs and possible disruptions to the supply of currency paper. As we explain in response to BEP's concern about these recommendations, we acknowledge and stress in the report that the impact of alternative strategies is uncertain and that many factors would have to be weighed in considering any option. In light of BEP's concerns and to recognize the uncertainty involved, we have deleted the recommendations proposed in our draft report to encourage Treasury and BEP to further consider the feasibility and advisability of additional measures to encourage competition.

Crane agreed with our suggestion to Congress that consideration be given to modifying the 4-year limit on currency paper contracts. However, Crane opposed our further suggestion to Congress that the Secretary of the Treasury be given additional authority to acquire currency paper from foreign-owned firms in the event that fair and reasonable prices cannot be obtained from a domestic source. We can understand Crane's position on this matter, since it believes that its prices have been fair and reasonable, and that the alternative of acquiring currency paper from a foreign source is not necessary. However as our report clearly states, there have been occasions in the past in which BEP has not been able to determine that Crane's prices were fair and reasonable, but the lack of other domestic suppliers and the current restriction prohibiting acquiring currency paper from foreign-owned sources unless no domestic source exists has limited the negotiating strategies. For these reasons, we continue to believe that Congress should consider limited expansion of the Secretary's authority.

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# Objectives, Scope, and Methodology

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Section 9003 of the fiscal year 1997 Emergency Supplemental Appropriations Act required that we complete “a comprehensive analysis of the optimum circumstances for government procurement of distinctive currency paper” and report our findings to the House and Senate Committees on Appropriations. According to the conference report accompanying the appropriations bill, the Conference Committee expressed concern over the fact that BEP has bought virtually all of its paper for the nation’s currency from a single supplier for over 100 years. The Conference Committee directed that we report on any limitations on competition in currency paper procurement and possible alternatives to the way BEP has been buying the paper, the fairness and reasonableness of prices paid for the paper, the potential for disruption of currency paper from relying on single supplier, and other matters.

In June 1997, the Chairman of the House Government Reform and Oversight Committee asked that we also report our findings to that Committee because of its interests in federal procurement matters. Senator Lautenberg, in June 1997, also requested that we report our findings to his office. In September 1997, 16 Members of Congress informed us of their interest in ensuring that our analysis was carried out in an objective manner and expressed their opinion that a review of the potential benefits and drawbacks of a single supplier relationship was appropriate.

As a result of the large number of congressional parties interested in this matter and because the public law that initiated it contained a general statement that we analyze “the optimum circumstances for government procurement of distinctive currency paper,” we met with the interested Members’ staffs to obtain the specific issues they wanted addressed, and we suggested approaches to address those issues. We identified numerous concerns and issues, which are covered under the following three broad objectives:

- Have BEP’s efforts to encourage competition for currency paper been effective?
- Have prices paid for currency paper been fair and reasonable and has the quality of paper been ensured?
- Is there potential for disruption to the U.S. currency paper supply from BEP’s reliance on a single supplier?

To address the first objective, the effectiveness of efforts to encourage competition for currency paper, we reviewed BEP procurement files for 5

contracts with 17 procurement actions awarded during 1988 to 1997 and the current solicitation. We also reviewed the 1983 and 1996 Department of the Treasury/BEP studies on currency paper procurement.<sup>19</sup> We interviewed and obtained documents from officials at BEP, Treasury, Crane, and the Federal Reserve.

In addition, we identified and surveyed 30 paper manufacturers of cotton-based security paper to determine their interest in and ability to supply currency paper to BEP. We identified the 30 manufacturers by (1) reviewing the 1996 Treasury/BEP currency paper study, which identified 7 producers; (2) reviewing the Lockwood-Post Directory of Pulp, Paper, and Allied Trades, 1995 edition, which listed 21 producers; and (3) interviewing a representative of the American Forest and Paper Association's Cotton Fiber Council, who identified 9 producers. The three sources, in some cases, identified the same producers. In total, we identified 30 different producers. See appendix IV for a copy of our questionnaire.

Our primary variable for analysis was interest in providing currency paper to BEP. We considered the 12 manufacturers who responded with "very interested" and "somewhat interested" in providing currency paper to BEP our most important group for the purposes of this study because they have a stated interest in supplying paper to BEP. These are referred to in our text as the "interested paper manufacturers." Of these 12, 7 were domestic and 5 were foreign manufacturers.

We conducted site visits to two paper manufacturing facilities, Crane in Dalton, Massachusetts; and FiberMark, Inc., in Bloomsbury, New Jersey. We selected Crane because it has been the long-standing single supplier of currency paper to BEP. The second manufacturing facility we visited was FiberMark, Inc., which was selected because of its expressed interest in competing to become a U.S. currency paper supplier.

To obtain a perspective on how other countries procure banknote paper, we sent a separate questionnaire to representatives of the other G-7 nations: Canada, England, France, Germany, Italy, and Japan.

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<sup>19</sup>Review of Distinctive Currency Paper, Aug. 1983, and the U. S. Currency Paper Study, June 1996. The 1983 study was initiated to determine whether alternative sources of distinctive currency paper were available to BEP. Concerns about a single supplier of currency paper prompted the 1996 study, which was undertaken to determine options for ensuring a reliable source of currency paper at a reasonable price.

We analyzed the Conte Amendment and its legislative history, the statute limiting the procurement of distinctive currency paper to 4-year contracts, and other applicable procurement laws and regulations to identify requirements affecting the procurement of currency paper. We interviewed Secret Service and BEP procurement and security officials regarding off-shore manufacturing issues—specifically, the security concerns that may have an impact on opportunities for competition. We also interviewed officials at the U.S. Mint; Government Printing Office; U.S. Postal Service; and the Departments of the Army, Navy, and Air Force to identify possible alternatives to BEP’s approach to procuring currency paper.

For our second objective, to determine the fairness and reasonableness of price and assurance of quality goods and services, we reviewed BEP procurement records from 1988 to 1997. Originally, we planned to review the files for currency paper contracts awarded by BEP for the past 15 years. However, BEP contract files contained records for only a 10-year period, 1988 through 1997. We examined documents in the files, such as price negotiation memoranda, cost and price analyses, and other supporting documents, to determine whether the contractor had provided the government with a quality product at a fair and reasonable price. We also reviewed Treasury IG and DCAA audit reports relating to the supplier’s cost proposals and cost accounting system.

To help us review the fairness and reasonableness of BEP prices, we contracted with Joe D. Quicksall, a consultant with specialized experience in procurement issues. Mr. Quicksall, who is a GAO retiree, added to this review his extensive knowledge of fair and reasonable pricing issues gained over his more than 30 years of auditing experience.

Mr. Quicksall analyzed the supplier’s cost proposals and the related IG and DCAA audit reports to assess how BEP used these data to evaluate and negotiate costs. Mr. Quicksall examined the impact of an arbitration decision related to questioned contract costs and profit and provided his opinion on BEP’s basis for determining fairness and reasonableness of price for contracts awarded from 1988 to 1997. Finally, we obtained IG/DCAA audit reports and interviewed BEP, IG, and DCAA staff concerning defective pricing practices of the currency paper supplier. We also interviewed BEP officials and reviewed BEP’s procurement records to obtain information on the quality and reliability of Crane’s currency paper deliveries.



To address the third objective, the potential disruption to the U.S. currency paper supply from BEP's reliance on a single supplier, we reviewed inventory reports and BEP's contingency plan for critical materials; and interviewed officials at BEP, the Federal Reserve, and the current supplier to determine current inventory levels, the potential for disruption to the supply of currency paper, and what steps, if any, would have to be taken to procure currency paper if it could not be obtained from Crane. We also toured the BEP facilities in Washington, D.C.; and Fort Worth, TX; and the Federal Reserve Bank in Dallas, TX, to determine the storage capacity for currency paper inventory. In addition, by survey, we collected information on currency paper inventories maintained by the other G-7 countries.

We conducted our review in Washington, D.C.; Dallas and Fort Worth, TX; Dalton, MA; Bloomsbury, NJ; and Hartford, CT, from June 1997 through August 1998, in accordance with generally accepted government auditing standards. We obtained written comments on a draft of this report from BEP and Crane. These comments are reprinted in appendixes VI and VII and are discussed at the end of chapter 5.

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# Synopsis of Six Paper Contracts Reviewed

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88-205 was a procurement action classified as a competitive solicitation that resulted in a letter contract awarded to Crane in December 1987. Crane was the only firm to submit a proposal to BEP for distinctive currency paper for 1-dollar and 2-dollar notes. The contract was for a 2-year period, with two 1-year options, definitized in May 1988, with an estimated value of \$45,144,000. Option year one was exercised effective May 1990, and option year two was exercised in May 1991. At the completion of option year two, the contract was extended for 6 months.

91-18 was a procurement action classified as a competitive solicitation. The contract was awarded to Crane in February 1991, the only firm to submit a proposal. The solicitation was to manufacture denominated distinctive currency paper with security thread, specifically, 20-, 50-, and 100-dollar notes. The contract was for a 1-year period with three 1-year options, with an estimated value of \$66,309,320. All options were exercised on the anniversary date of the contract, and the contract was also extended from February 1995 to May 1995.

93-14 was a procurement action classified as a competitive solicitation. The contract was awarded to Crane in January 1993, the only firm to submit a proposal to BEP. The solicitation was to manufacture distinctive currency paper. The contract was for a 1-year period with four 1-year options with an estimated value of \$16,471,779. Option one was exercised on the anniversary date of the contract. The remaining options were not exercised.

95-23 was a sole-source contract awarded to Crane in June 1995 for the manufacture of all three types of paper currently being used, distinctive currency paper, distinctive paper with a security thread, and the new currency design paper containing security thread and a watermark. The contract was for a period of 1 year, with two 6-month options and with an estimated value of \$54,342,281. The new currency design paper was not priced in the initial contract but was priced in a modification.

97-10 was a sole-source contract awarded to Crane in September 1997 for the manufacture of all three types of currency paper. The contract, known as the bridge contract, is for a period of 2 years, with no options and at an estimated value of \$171,458,298.

97-13 is a competitive solicitation for a possible 4-year contract to manufacture three types of currency paper and is expected to be awarded in December 1998.

# Interests of Paper Manufacturers Responding to GAO'S Survey

Table I.1 lists the 30 paper manufacturers to which we sent our questionnaire, identifies those that responded, and identifies those that stated that they were interested in supplying currency paper to BEP.

**Table III.1 Paper Manufacturers  
Participating in GAO's Currency Paper  
Survey**

<b>Paper Manufacturer</b>	<b>Responded to survey?</b>	<b>Interested in supplying currency paper to BEP?</b>
Arjo-Wiggins Paris, France	Yes	Yes
Boise Cascade Portland, OR	Yes	Yes
Buckeye Cellulose Corp. Memphis, TN	No	No
Cheney Pulp & Paper Franklin, OH	No	
Cottrell Paper Co. Rock City Fall, NY	Yes	No
Cross Pointe Dayton, OH	No	
Crown Vantage Milford, NJ	Yes	Yes
Domtar Security Papers Montreal, Canada	Yes	Yes
Eastern Paper Amherst, MA	No	
Esleek Manufacturing Turner Falls, MA	Yes	No
FiberMark Bloomsburg, NJ	Yes	Yes
Filter Materials Waupaca, WI	Yes	No
Fletcher Alpena, MI	Yes	Yes
Fox River Paper Appleton, WI	Yes	Yes
Fraser Paper Company Stamford, CT	No	
Georgia Pacific Port Edwards, WI	Yes	No
Gilbert Paper Menasha, WI	Yes	Yes
International Paper Co. Memphis, TN	Yes	Yes
Knowlton Specialty Papers Watertown, NY	No	

(continued)

**Appendix III  
Interests of Paper Manufacturers  
Responding to GAO'S Survey**

<b>Paper Manufacturer</b>	<b>Responded to survey?</b>	<b>Interested in supplying currency paper to BEP?</b>
Louisenthal Frankfurt, Germany	Yes	Yes
Lunday Thagard Company South Gate, CA	No	
Neenah Paper Neenah, WI	Yes	No
NVF Company Yorklyn, DE	No	
Parsons Paper Company Holyoke, MA	No	
Portals Overton, United Kingdom	Yes	Yes
Rolland, Inc. Quebec, Canada	Yes	No
Southworth Company West Springfield, MA	Yes	No
Spexel Quebec, Canada	Yes	Yes
Strathmore Paper East Granby, CT	Yes	No
Wausau Papers of New Hampshire Groveton, NH	No	
<b>Total</b>	<b>20</b>	<b>12</b>

# GAO's Paper Manufacturers Survey

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**GAO**

United States General Accounting Office

**Paper Manufacturers Survey - Interest in Supplying  
Currency Paper to the Bureau of Engraving and Printing**

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**Introduction**

The U.S. General Accounting Office (GAO) is an independent audit agency of the United States Congress. We are responsible for auditing and evaluating government programs and activities. We are currently reviewing the Bureau of Engraving and Printing's procurement of currency paper. As part of our study, we are surveying paper manufacturers to determine their interest in and capability to provide currency paper to BEP.

Most of the questions in this survey can be answered easily by checking boxes or filling in blanks. A few questions require short narrative answers. Additional comments may be written at the end of the questionnaire. The questionnaire should take less than 15 minutes to complete.

GAO will take steps to safeguard the privacy of your responses. We will not identify the name of your company in any discussion of responses or comments in our report.

Please complete the survey and fax it to Ms. Tammy R. Conquest at (202) 512-3796. We would greatly appreciate if you could return your completed questionnaire by December 31, 1997. If you have any questions, please phone Ms. Conquest at (202) 512-5234.

Thank you for your cooperation.

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**Please provide the following information:**

Company name: \_\_\_\_\_

Name of person completing survey: \_\_\_\_\_

Mailing address of person completing survey: \_\_\_\_\_  
\_\_\_\_\_

Title: \_\_\_\_\_

Telephone number: (\_\_\_\_\_) \_\_\_\_\_

Fax number: (\_\_\_\_\_) \_\_\_\_\_

**Appendix IV  
GAO's Paper Manufacturers Survey**

1. Has your company ever had a contract for supplying currency paper to the U.S. Bureau of Engraving and Printing (BEP)? *This does not include research and development projects. (Check one.)*

1.  No

2.  Yes → Please provide the following information:

Year of each contract	Dollar amount of contract	Tons of paper produced
	\$ _____	
	\$ _____	

2. Has your company ever competed for BEP currency paper contracts, including the current solicitation? *(Check one.)*

1.  No

2.  Yes → When did you compete and what were the results of the competition?

Date(s):

Results of competition:

\_\_\_\_\_ . . . . . \_\_\_\_\_  
 \_\_\_\_\_ . . . . . \_\_\_\_\_

3. Currently, how interested is your company in providing currency paper to BEP? *(Check one.)*

1.  Very interested \

2.  Somewhat interested →

3.  Somewhat uninterested /

4.  Not at all interested

5.  Not sure at this time

Please briefly describe the steps your company has taken to be able to supply currency paper to BEP.

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

4. How familiar is your company with the basic specifications and requirements to provide currency paper to BEP? *(Check one.)*

1.  Very familiar

2.  Somewhat familiar

3.  Not at all familiar

**Appendix IV  
GAO's Paper Manufacturers Survey**

5. Have the following factors either prevented or made it difficult for your company to compete for BEP currency paper contracts? *(Check one box in each row.)*

	Yes	No	If yes, please elaborate on why the factor has prevented or made it difficult for your company to compete for BEP contracts.
a. The length of BEP manufacturing contracts are too short to recover necessary capital investments.			
b. The market for currency paper is too small.			
c. BEP's allowed start-up/ramp-up time is too short.			
d. The requirement that joint ventures with foreign firms must be 90% U.S. owned.			
e. BEP unwillingness to finance capital investment.			
f. Security requirements for the manufacturing process.			
g. The technology required to incorporate anti-counterfeiting features in paper.			
h. License or royalty payments to holder(s) of anti-counterfeiting features.			
i. Other - Please specify: _____			
j. Other - Please specify: _____			

6. Of all the factors listed in question 5, which would you say was the most important one in preventing or making it difficult for your company to compete for BEP currency paper contracts?  
*(Enter letter (a-j) from question 5.)*

**Appendix IV  
GAO's Paper Manufacturers Survey**

7. In your opinion, should BEP do things differently to increase competition in the procurement of currency paper? *(Check one.)*

1.  Yes → Please describe what you believe BEP should be doing to increase competition.

2.  No

3.  No opinion

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8. Has your company ever asked BEP to make any changes in its procurement process, including the solicitations issued, to better enable you to compete? *(Check one.)*

1.  Yes → Please describe the changes your company requested and BEP's response.

2.  No

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9. Is your company now capable (i.e., have the equipment, skills, and experience) and would it be capable within two years of being awarded a contract to produce the following paper products that meet BEP's specifications? *(Check two boxes in each row.)*

	Is your company now capable?		Would your company be capable within 2 years of being awarded a BEP contract?	
	Yes	No	Yes	No
a. Currency paper without watermarks or security threads				
b. Currency paper with watermarks				
c. Currency paper with security threads				



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**Appendix IV**  
**GAO's Paper Manufacturers Survey**

10. Please use the space below for any comments you might have regarding the competitive procurement of currency paper by BEP? *(If necessary you may add additional sheets.)*

**Thank you very much.**  
Please fax your responses to Ms. Tammy R. Conquest at (202) 512-3796

# Prices for Currency Paper on Five Contracts GAO Reviewed

**Table II.1: Per Sheet<sup>a</sup> Prices of Currency Paper Ordered for Five Contracts GAO Reviewed**

Contract	Types of paper		
	Unthreaded	Threaded	Threaded with watermark
<b>88-205</b>			
Letter contract	\$.1240		
Base period (2)	.1254		
Option I	.1542		
Option II	.1542 <sup>b</sup>		
Extension	.1542 <sup>b</sup>		
<b>91-18</b>			
Base period (1)		\$.3932	
Option I		.2977 <sup>b</sup>	
Option II		.2686 <sup>b</sup>	
Option III		.2627 <sup>b</sup>	
Extension	.1550 <sup>b</sup>		
<b>93-14</b>			
Base period (1)	.1599 <sup>b</sup>		
Option I	.1640 <sup>b</sup>		
<b>95-23</b>			
Base period (1)	.1643	.2484	\$.4230
Option I (6 mos.)	.1633	.2452	.4036
Option II (6 mos.)	.1641	.2456	.4034
<b>97-10</b>			
year 1	.1802	.2471	.4480
year 2	.1705	.2375	.4818

<sup>a</sup>Contract prices are given on a per-sheet basis. Each sheet produces 32 currency notes.

<sup>b</sup>Prices shown are interim prices that were settled at a lower price in arbitration on an aggregate contract basis.

Source: BEP contract files.

# Comments From the Department of the Treasury and the Bureau of Engraving and Printing



## DEPARTMENT OF THE TREASURY

### BUREAU OF ENGRAVING AND PRINTING

WASHINGTON, D.C. 20228

July 29, 1998

Mr. Bernard L. Ungar  
Director, Government  
Business Operations Issues  
U. S. General Accounting Office  
441 G Street, N. W., Mail Room 2440  
Washington, D. C. 20548

Dear Mr. Ungar:

Thank you for the opportunity to review and comment on the GAO's report "PROCUREMENT OF CURRENCY PAPER." The following formal written documentation is in response to what we consider to be the major areas of concern. In addition, we had a large number of oral comments which we discussed in detail with the GAO staff in a meeting held on July 29, 1998. At this meeting we discussed detailed comments that would have been too lengthy to include in the written response

The majority of the GAO's issues contained in the report were previously identified in the Currency Paper Study dated August 27, 1996. This study was initiated by the former Assistant Secretary (Management) and Chief Financial Officer, Department of the Treasury. The task force conducting the study included representatives from Treasury, the Federal Reserve System, the U.S. Secret Service and BEP. The conclusions and recommendations were approved by the Assistant Secretary. As evidenced by the contract files, BEP has subsequently taken responsible steps to address the conclusions and recommendations of the study in our current solicitation for currency paper.

The GAO review covered the five contracts awarded to Crane and Co. between 1988 and 1997 and the current solicitation. BEP followed the provisions of the Federal Acquisition Regulation (FAR) in all actions associated with the solicitation and award for these contracts. The GAO report does not recognize this compliance. While in hindsight, other suggestions and recommendations for improvements can always be made, BEP's compliance with the FAR should be clearly stated at the beginning of the report.

*The following comments are provided in response to the specific recommendations to the Secretary of the Treasury.*

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**Appendix VI  
Comments From the Department of the  
Treasury and the Bureau of Engraving and  
Printing**

Recommendation: The Secretary should consider amending solicitation 97-13 and future solicitations to provide financial assistance to the extent authorized by law and if deemed to be economically advantageous to the government. In determining whether to provide financial assistance, the Secretary should evaluate whether any such government investment would be recovered through lower currency paper prices, especially in view of possible changes in the long-term needs for currency paper which could be affected by changes in the material used for printing currency, the redesign of currency paper designs and anticounterfeiting measures, or the replacement of the 1-dollar note with a 1-dollar coin.

Comments: BEP endorses the GAO's intent to provide financial assistance to develop potential currency paper suppliers. As noted in the GAO report, Solicitation 97-13 provided an opportunity for offerors to propose "innovative acquisition and financing arrangements." This clause provided BEP with the necessary flexibility in the current solicitation to provide financial assistance to contractors if it was deemed economically advantageous to the government. Any such request for financial assistance would be considered to determine if the investment would be recovered through lower currency paper prices, and, if so, contract award(s) would be let accordingly. BEP also concurs that the long term needs for currency paper might be affected by changes in materials, currency redesigns, anticounterfeiting measures, and the one dollar coin. A study is currently being conducted by the Department of the Treasury to project the future demand for currency. The study includes representatives from Treasury, the Federal Reserve System, the Mint and the BEP. Once the results of this study are known, BEP will be in a better position to assess the cost reduction potential associated with developing additional paper suppliers. However, the study is not expected to be completed for a year. Therefore, in consideration of the financial assistance currently being offered in solicitation 97-13, and the uncertainty of the future demand for currency, BEP does not concur with the recommendation to amend solicitation 97-13. GAO should retract that portion of the recommendation and propose that BEP award a contract for solicitation 97-13 in accordance with the established timeframe.

Recommendation: If adequate price competition is not received, the Secretary should reconsider whether it would be cost effective to exclude the current source from some or all of BEP's requirements in order to establish an alternate source.

Comment: The BEP reviewed this option in 1993 and again in the Currency Paper Study in 1996. Excluding the current source for all requirements was not feasible because past history has not shown that another source could provide the entire currency paper requirement within current legal constraints. Thus, adopting this recommendation could put the BEP in a situation where there was not an adequate supply of currency paper, thereby jeopardizing its ability to perform its mission of producing the Nation's currency. Excluding the current source for part of the requirement was determined not to be practical or economically feasible. Even a

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Printing**

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disruption in the currency paper supply for a portion of the program would be detrimental to the BEP and its ability to provide the nation's currency. A determination was also made that the price for currency paper could increase significantly due to the high capital investment cost for a potential new supplier. Exclusion of the current supplier under this circumstance would not be in the best interest of the government. Solicitation 97-13 was formulated to include as many of industry's comments as permissible under statutes and regulations, to promote competition to the maximum extent possible.

Recommendation: To strengthen BEP's capacity to ensure fair and reasonable prices, we also recommend that the Secretary direct BEP to:

-ensure the contractor implements acceptable cost accounting and estimating systems for future contract(s) and that they are periodically audited;

Comment: Pursuant to Public Law 100-679 (41 U.S.C. 422), contractors must comply with Cost Accounting Standards, and disclose and follow consistent cost accounting practices. BEP has taken, and will continue to take, the actions necessary to ensure compliance. BEP has audited the contractor's cost accounting practices and will continue to do so within legal requirements and the provisions of the FAR.

-arrange for post-award audits of the contractor's costs.

Comment: In accordance with FAR 15.407-1(c)(iv)(c) requirements, "a post award audit is required if the contracting officer learns or suspects that the data furnished was not accurate, complete and current or not verified by the contractor at the time of negotiation." The contracting officer shall request an audit to evaluate whether the data is accurate, complete and current. BEP has requested post-award audits on a number of currency paper contracts. However, ongoing OIG and DCAA investigations and audits occasionally interfered with timely post-award audits. Requests for several of these audits are currently pending.

Recommendation: Finally, we recommend that the Secretary ensure that in all future currency paper procurements

-The solicitations reflect the expected amounts of paper needed and orders against contracts are evened out, allowing the supplier(s) to maintain a steady production level and to minimize the equipment they have to acquire;

Comment: BEP recognized that improvements were needed in estimating quantities of currency paper required, and that ordering patterns should be evened out. BEP addressed this situation before the award of TEP 97-10 (prior to the GAO review). Prior to the issuance of solicitation 97-13, the contracting officer worked closely with the Office of Production and Inventory Management to ensure that the quantities were current and accurate based on the Federal Reserve's program estimates and that proper allowances were made for changes to the program in support of the contingency

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plan and conversion to the new currency design. We ask that GAO recognize in the report that BEP had previously identified this problem and had taken corrective actions.

-BEP, to the maximum extent possible, makes more extensive use of cost and price analysis to determine the fairness and reasonableness of prices, including the collection of data from foreign countries on their currency prices and data on similar supplies purchased by other agencies, such as paper for passport and money order;

Comment: BEP disagrees with GAO's assertion that assessments of the fairness and reasonableness of the contractor's proposed prices "were hampered by the limited analysis of proposed costs and prices it performed." For all the referenced currency contracts, the BEP did a cost analysis of proposed costs and prices in accordance with the Federal Acquisition Regulation (FAR 15.404-1). In 1995 the BEP and the contractor used Alternate Dispute Resolution (ADR) to reconcile final pricing for contracts TEP-88-205, TEP-91-18 and TEP-93-14. As a result of the ADR, the contracting officer determined that a higher level of detailed cost analysis was necessary, and numerous additional methods and techniques were used to determine whether the prices were fair and reasonable on the current contract (TEP-97-10) and the previous contract (TEP-95-23). Specifically, the BEP:

- completed a technical analysis of quantities of materials, labor, processes, facilities, yields, spoilage, etc. (TEP-97-10);
- evaluated every cost element for reasonableness of proposed cost (TEP-95-23 and TEP-97-10);
- analyzed the necessity for and reasonableness of production yields and improvements as equipment was modernized and volumes increased (TEP-97-10);
- analyzed historical trends and their relation to projection of future costs (TEP-97-10 and TEP-95-23);
- evaluated the reasonableness of estimates (TEP-97-10 and TEP-95-23);
- reviewed and validated parametric models for cost estimating based on historical costs as well as a learning curve analysis (TEP-97-10);
- performed a regression analysis on material overhead rates and process costs (TEP-95-23);
- applied audit recommendations as appropriate (TEP-97-10 and TEP-95-23);
- analyzed offeror's actual production reports and evaluated their ability to project a yield and the accuracy of their projections (TEP-97-10);
- compared proposed costs to actuals, historicals, and cost estimates (TEP-97-10 and TEP-95-23);
- reviewed forecasts of material costs and planned expenditures (TEP-97-10 and TEP-95-23);

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- performed a cost realism analysis to analyze the cost associated with the production of the new \$20s currency paper on new equipment without any historical data (TEP-97-10);
- verified proposed costs in accordance with contract cost principles and procedures and the Cost Accounting Standards (TEP-97-10 and TEP-95-23);
- performed an analysis to ensure that prices were balanced from one type of paper to another and from year to year (TEP-97-10 and TEP-95-23);
- reviewed proposed costs to ensure they were current, accurate and complete (TEP-97-10 and TEP-95-23); and
- performed price comparisons of proposed prices to current contract prices and to the independent government estimate (TEP-97-10).

The BEP has attempted in the past to obtain cost data from foreign countries on the cost of their currency paper, but has not had any success. GAO informed BEP that during this current review that it had attempted to obtain this information from foreign sources and was unsuccessful. BEP will continue in the future to try to obtain this data, but at the present time there is no indication that our efforts will be any more successful than they were in the past. BEP would also appreciate GAO sharing any data in this area that they might have obtained during their review. Comparison of currency paper prices to passport paper and money order paper would not produce any meaningful information. GAO stated that while they recognize that these products are different, they believe that they are similar enough to provide some insight for assessing cost and price trends over time. Passport paper and money order paper are not subject to the same stringent requirements as currency paper. Only currency paper has the durability specifications of crumple, laundry, chemical soak, chemical rub, and wet strength. Currency paper is 75 % cotton and 25% linen; passport paper is only 50% cotton with the balance of the content unspecified; and money order paper is made from wood pulp and requires no cotton. The watermarks contained on money orders are stamped or printed watermarks; but the watermark used on currency paper is integral to the paper manufacturing process. Additionally, passport and money order paper are printed using offset printing which does not subject the paper to the extreme pressures of intaglio printing used on currency paper.

-the government obtains royalty-free data rights to any future security measures incorporated into currency paper.

Comment: The BEP agrees that it would have been preferable to have obtained royalty-free data rights for the security thread used in currency paper. BEP tried to obtain these rights in the early 1990's. However, since the BEP did not provide funds to the current supplier's development of the security thread, it does not have any legal claims to the current supplier's data rights. The BEP cannot force the current supplier to provide data free rights and must work within these boundaries. This currently results in increasing the cost of our currency paper contract by less than 0.2%. Nevertheless,

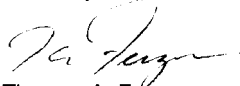
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**Appendix VI  
Comments From the Department of the  
Treasury and the Bureau of Engraving and  
Printing**

BEP plans to negotiate to obtain the data rights to any counterfeit deterrent features that may be implemented in the future.

If you have any questions in regards to our response, please contact Greg Carper, Associate Director/Chief Financial Officer, at (202) 874-2020.

Sincerely,



Thomas A. Ferguson  
Acting Director



# Comments From Crane & Co.

Note: GAO comments supplementing those in the report text appear at the end of this appendix.



July 28, 1998

Mr. Bernard L. Ungar  
Director, Government Business Operations Issues  
United States General Accounting Office  
General Government Division  
Government Business Operations Issue Area  
441 G Street, N.W., Room 2A10  
Washington, D.C. 20548

Dear Mr. Ungar:

Crane & Co. appreciates the opportunity to provide comments on your July 22, 1998 Draft Report concerning the procurement of currency paper by the Bureau of Engraving and Printing ("BEP"). We commend the GAO study team for its substantial efforts to gather information responsive to Congressional requests and offer its observations on the unique partnership that has been forged between the U.S. government and Crane & Co. ("Crane") to meet the nation's need for a secure, high quality, reasonably-priced source for paper currency. As you know, for nearly 120 years Crane has supplied the Treasury its universally-recognized U.S. currency paper with a unique weight, durability, linen-based texture and advanced technological features that has become a world-wide symbol of economic stability and prosperity.

We welcome the GAO's study because of the importance of understanding what the Draft Report calls a "unique market" for currency paper. While specific issues were identified for GAO consideration, we believe that it is essential to understand why the United States, like virtually every other G-7 nation, relies on a single domestic supplier for currency paper. Like other industrialized countries, the United States has had a "long-term relationship" with a supplier that "has historically resulted in quality currency paper." Draft Report at 7. Unlike other industrialized countries, however, the single source of currency paper in the United States has been selected, for the most part, in an open and competitive process.

Indeed, as BEP has noted, "Crane has been a reliable source for currency paper and has not missed a paper delivery in over 100 years." Draft Report at 11. This remarkable performance has been achieved at prices that are significantly lower than prices paid by other leading nations to their currency paper suppliers. Most importantly, all of this has been accomplished with technological advances that have protected U.S. currency against counterfeiting -- a critical national security concern. Indeed, any comprehensive analysis of the "optimum circumstances"

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Now on p. 6.

See comment 1.

Now on p. 7.

See GAO comment 2.

for procuring currency paper must take into account the special role of currency and the enormous value that confidence in U.S. currency provides through its acceptance as a world-wide medium of exchange.

As GAO itself has previously testified, that confidence in U.S. currency provides \$10-16 billion in savings to the federal budget every year through the avoidance of interest payments on outstanding federal reserve notes held domestically and overseas. (*See* discussion in Section V(D) *infra*). The United States continues to reap these important budgetary benefits in part because of the special, high-quality material on which U.S. currency is printed. While the unique feel of U.S. currency paper has remained unchanged through several redesigns over the past century, today the paper itself is a highly sophisticated product containing advanced anti-counterfeiting features, including a non-apparent metallized security thread and a unique watermark. No other currency in the world is as difficult to counterfeit.

Accordingly, our comments to the GAO's report are drawn from a record of successfully meeting the critical needs of the U.S. economy for a dependable, secure source for currency paper over a sustained period of time. Based on our experience in this unique market, Crane would like to first provide some summary observations about GAO's recommendations and Crane's view of competition and fair and reasonable prices. The remainder of our comments provide a more detailed analysis of GAO's findings of fact and conclusions.<sup>1</sup>

**I. Crane's Preliminary Observations**

**A. GAO Recommendations for Congressional Action**

The GAO recommends that Congress (1) consider allowing for longer currency paper contracts and (2) consider altering the domestic source requirement to permit the Secretary of Treasury to procure currency paper from an overseas source if the Secretary is unable to obtain a fair and reasonable price domestically.

Crane & Co. supports the GAO's first recommendation. It would apply evenly to all prospective suppliers and would increase the opportunity for other suppliers to participate in currency paper solicitations.

Crane & Co. believes the GAO's second recommendation is a poor alternative to achieve the goal the GAO has in mind -- greater flexibility in sole source procurements of currency paper.

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<sup>1</sup> To the extent that we have identified what appear to be factual inaccuracies in the Draft Report, we have included as Attachment 1 a brief list of these items.

See GAO comment 3.

See GAO comment 3.

This proposed recommendation is illogical and inconsistent with the GAO's clear finding that national security interests require domestic sourcing of currency paper. In the extreme circumstance of a price negotiation impasse, the solution is not to sacrifice national security interests by turning to overseas sources, but rather to utilize some form of alternative dispute resolution, such as arbitration.

**B. GAO Recommendations for Treasury Action: the BEP Has Already Adopted Virtually All of the GAO's Recommendations in Pending Solicitation BEP 97-13.**

See GAO comment 4.

Six of the twelve companies responding to the GAO survey as interested in supplying the Treasury with currency paper were interviewed in depth by the BEP in 1995 and their interests and suggestions were incorporated by the BEP in the currently pending solicitation 97-13. That solicitation was also published in draft form for industry comments in July of 1996, and revised subsequently on three more occasions to incorporate further industry comments. The issues identified by the GAO in its industry survey are no different than those already obtained by the BEP and incorporated into the final version of solicitation 97-13 released May 2, 1997.

The enhanced bidding opportunities for responsible currency paper sources contained in solicitation 97-13 include the opportunity to bid on some or all of the BEP's requirements for both plain and watermarked paper; the opportunity to take up to 24 months to "tool up" between contract award and initial performance; the opportunity to propose and price financing that would assist individual bidders; and the opportunity to present paper samples which are "representative" rather than actual because they may be made on equipment not currently owned and installed by the contractor, but to be installed once the contractor receives an award. In addition, the solicitation proposes to award a contract for the longest time period permitted by Congress -- four years.

See GAO comment 4.

This solicitation addresses nearly every recommendation made by the GAO to enhance competitive opportunity for interested companies. The result is a competitive solicitation that goes far beyond that offered by any other country in the world. If there is any merit to the GAO's criticism of the BEP's past practices, the BEP has addressed these issues well in advance of this GAO study.

**C. Open Competition Means the Opportunity to Compete.**

See GAO comment 1.

Competition is not achieved by purchasing bids from would-be suppliers, and the absence of multiple suppliers is not the absence of competition. Competition is defined by Congress and the Federal Acquisition Regulations as circumstances where "all responsible sources are permitted to compete." Crane strongly supports this concept of competition, and notes that all 24 of the domestic respondents to the GAO's questionnaire were legally eligible to bid on the current open solicitation. The GAO has identified some features of currency paper procurement that have historically made it difficult for companies to succeed in competitions with Crane, but this only highlights the fact that Crane has been successful at providing a superior product at a reasonable price.

See GAO comment 5.

If any domestic company had wanted to make the same commitment Crane has made, it would not now be presented with the market access difficulties the GAO has identified in its report. The GAO fails to adequately explain why the fundamental concepts of fairness in federal procurement should be abandoned for the special benefit of a few companies that have recently become interested in supplying currency paper to the Treasury.

**D. Negotiated Currency Paper Prices Have Been Fair and Reasonable.**

See GAO comment 6.

Currency paper prices have neither been “Crane prices” nor “Bureau prices”. They have represented negotiation and compromise in a context that the GAO recognizes as “unique”. There is only one legal customer for US currency paper and, because of the character of the product, the steep capital investment required to manufacture it, and Crane’s superior performance, it is not surprising that it has been supplied by a single company for many years. In this context, the BEP and Crane have usually been able to reach an agreement on prices. Every agreement has involved compromise by both parties, and independent analyses confirm that the agreed-upon prices were fair to both parties. Notably, prices for stable products have remained stable for long periods of time, and prices for new products have declined as cost savings were achieved and passed on to the government through lower prices. Finally, in the only instance where prices could not be agreed upon, the parties turned to Professor Ralph Nash, a leading authority on federal contracts, to determine fair and reasonable prices. His determination was embraced by both the BEP and Crane as fair, and provides a continuing benchmark for pricing this “unique” product.

In short, the history of pricing in this “unique” market has been fair and reasonable. Furthermore, “Best Value”, not just lowest cost, should be the government objective.

**II. The GAO Fails to Adequately Explain the Optimum Circumstances for the Procurement of Currency Paper.**

See GAO comment 7.

Crane shares with Congress a desire to define the “optimum circumstances” for the procurement of distinctive currency paper. However, we believe that this analysis requires the balancing of a variety of factors, some of which the Draft Report contains and others which it omits. Crane agrees with many of GAO’s factual findings, but in material respects we believe that the GAO’s conclusions are either not supported by its factual findings or are otherwise not relevant. In the short time available to us to review and comment on the Report, we have attempted to provide the GAO with our analysis of the complex and challenging issues involved.

In brief, the GAO’s factual findings fail to support the recommendations in the Draft Report. First, the factual history shows that except for the past three years, Crane consistently has obtained contracts through competitive bidding, not sole-source contracting. Thus, Crane earned the government’s trust as the reliable supplier of a high technology product that is critical to national economic security. In addition, during the past three years, BEP also issued two “interim” and “bridge” contracts, while it conducted a serious currency paper market study covering many of the issues addressed in the Draft Report. During this same time period BEP also developed innovative terms to enhance competition and attract new bidders in the competitive solicitation under RFP 97-13 that is currently under bid. Thus, to delay or amend the current solicitation at this time would deprive BEP of the benefit of this competition. In any

**Appendix VII**  
**Comments From Crane & Co.**

event, the Draft Report offers no facts or analysis to support the conclusion that “more” is needed to ensure competition.

See GAO comment 7.

Second, the Draft Report offers no evidence that the negotiated prices were anything but fair and reasonable. Based on pricing history, the examination of internal cost-cutting efforts and international price comparisons, it is manifest that the negotiated prices have been fair and reasonable.

See GAO comment 6.

Third, the Draft Report finds no significant concerns with possible supply disruption, but fails to address the most important aspect of the currency paper market, which reflects the fact that the direct benefit to the government of maintaining the quality and reliability of the currency is worth more than 200 times the cost of currency paper itself. In focusing on speculative possible cost savings, the Draft Report misses the more important aspect of currency as a valuable national security and economic resource.

See GAO comment 8.

**A. Enhancing Competition.**

The GAO’s implicit conclusion that BEP has not “done enough” to promote competition is directly contradicted by the GAO’s factual findings on this topic. In fact, the Draft Report itself recounts the history of full and open competitions conducted by BEP, the history of the attempts and failures of other companies to meet either Crane’s low prices or the government’s currency paper requirements, the government’s prior analytical studies of the currency paper market, and the recent efforts made by BEP to promote competition further. The history recounted in the Draft Report demonstrates that, in fact, BEP has focused adequate attention on the enhancement of competition.

See GAO comment 7.

In the current competitive procurement BEP has already adopted most of Draft Report’s recommendations to enhance competition, such as committing to longer term contracts, extending the allowable mobilization period, increasing the minimum guaranteed production volume, offering multiple bidding scenarios, and considering “innovative acquisition and financial arrangements” proposed by offerers. Draft Report at 10. As to the recommendations concerning data rights, Crane has no objection to the government obtaining royalty-free data rights as long as the government pays for the research effort that results in development of the data. Other concerns raised by the Draft Report with respect to the current solicitation are based on an erroneous reading of solicitation BEP 97-13 (as noted in Attachment 1) and are not obstacles to competition at all.

Now on pps. 7-8.

See GAO comment 9.

Thus, almost all of the recommendations of the Draft Report concerning competition are already in place or are under consideration in the current competition. In light of the enhanced competitive process already being implemented, it would be premature to take further actions until the results of the pending competitive process can be realized and assessed.

See GAO comment 4.

**B. Fair and Reasonable Pricing.**

The Draft Report incorrectly implies that some of the contract prices may not have been fair and reasonable. With a proper understanding of the 17 contract pricing actions reviewed by the GAO's staff, however, there is no question that each price was fair and reasonable, and furthermore that each pricing action was well within established contract pricing regulations. In addition, it is clear that the government's financial interests have been well protected through determinations of fair and reasonable pricing, through the full disclosure and auditing of Crane's cost and pricing data, and through the settlement of unresolved pricing based on the retrospective actual and audited cost results -- providing the government with the benefit of about \$12 million in cost savings under a "fixed-price" contract, where such "givebacks" are not the norm.

See GAO comment 6.

See GAO comment 10.

In fact, Crane made substantial investments in new technologies and facilities at its own risk and without any guarantee that BEP would utilize the technology or continue buying currency paper from Crane. Crane's audited prices show that the benefit of these investments, once production operations have stabilized, has been passed through to the BEP in the form of cost savings realized in price negotiations or in arbitration. The data gathered by your staff and set forth in Appendix V of the Draft Report clearly indicate that negotiated prices have been fair and reasonable, especially when presented in the simple chart at Attachment 2 to this letter.

See GAO comment 6.

Moreover, the Draft Report fails to mention that the Treasury Department recently surveyed other major industrialized nations and found that "our currency paper costs are lower than any of these countries." See Subsection III(B) *infra*. Thus, all available evidence strongly supports the conclusion that negotiated prices have been fair and reasonable. Importantly, the Draft Report does not conclude that negotiated prices are unfair or unreasonable, nor does it provide any direct evidence or analysis to support such a conclusion.

See GAO comment 2.

See GAO comment 6.

**C. The Potential for Supply Disruption.**

The Draft Report's attention to the potential for supply interruptions as the only area of vulnerability related to currency procurement is too narrowly focused. Crane agrees with GAO's conclusion that the risk of supply disruption is not substantial. As the Draft Report states: "Quality has not been a problem" and "there have not been any disruptions in the supply of currency paper for last 119 years." Draft Report at 49, 60.

Now on pps. 33 and 41.

See GAO comment 8.

While mentioning the low risk of a disruption in the supply chain, the Draft Report completely ignores the very real threat of disruptions from high-technology counterfeiting. This larger point is addressed in other recently-published GAO reports, in which the GAO has testified to the immense value -- estimated at \$10-16 billion in savings to the federal budget every year -- of maintaining world-wide confidence in the security of U.S. currency. National security experts believe that counterfeiting now includes activities sponsored by foreign governments for the purpose of economic terrorism against the United States. Instead of addressing this very real threat to the economy, and the importance of advanced anti-counterfeiting technology in the currency paper itself, the Draft Report focuses its concerns on less critical issues which for the most part, have already been addressed in connection with the competitive procurement that is currently being conducted by BEP.

See GAO comment 8.

See GAO comment 11.

**D. “Optimum Circumstances” for Procurement**

Overall, the Draft Report fails to respond to the challenge of defining “[t]he optimum circumstances for the procurement of distinctive currency paper.” While the Draft Report conjures a vision of a hypothetical competitive market in which “a number of responsible sources would compete for BEP’s requirements,” Draft Report at 6, the GAO quickly acknowledges that “these circumstances have not existed [in part] because of the unique market for currency paper.” Moreover, the Draft Report acknowledges (three times) that the “United States’ reliance on a single source for currency paper is not unique, as most of the other G-7 nations also rely on a single domestic supplier for their banknote paper.” *Id.*; *see also id.* at 11, 12.

Now on p. 5.

See GAO comment 12.

Notably, the Draft Report fails to consider why most advanced industrial countries desire their own single domestic source, or the benefits of maintaining a single supplier relationship. Nor does the Draft Report explain the nature of the admittedly “unique market” for currency paper. Thus, the GAO fails to acknowledge the primary reasons that “perfect competition” is deemed either unattainable or undesirable by most large industrialized nations: (1) There is only one legal buyer for currency paper; (2) a limited and relatively stable level of production is required; and (3) national security concerns associated with currency paper are paramount given the unique nature of the product.

See GAO comment 12.

**E. The Option of Providing a Subsidy or Excluding Crane**

Most disturbing is the GAO’s recommendation that BEP consider forcing an artificial competition either by providing large subsidies for the construction of new currency paper-making facilities or by “excluding” Crane from future procurements. Not only would such actions be completely anti-competitive, but they also would jeopardize the currency supply by replacing a proven, reliable and highly secure source of currency paper with a supplier that has no experience in manufacturing currency paper, much less the advanced threaded and watermarked currency papers.

See GAO comment 13.

Although the Draft Report suggests that the BEP should consider this approach as “steps toward” optimum circumstances for the procurement of currency paper, GAO is unable to offer any evidence that success in any relevant area -- cost savings, technical advancements, or improved security -- is likely to result from implementing its recommendations. In particular, GAO offers no evidence or analysis to suggest that these measures are likely to be effective given that all prior efforts by competitors have failed.

See GAO comment 13.

In fact, the Draft Report itself expressly warns that adopting a second-source approach could result in total failure:

It is uncertain whether the government should try to develop a second source for future paper needs, primarily because BEP does not know how prices would change under such an agreement. Prices might increase if more than one supplier were used. For example, if the same quantity of paper is spaced over two or more suppliers, each with substantial capital investments, the unit price for paper is likely to be higher from each. Therefore, although a second supplier could lessen the government's vulnerability to a disruption in supply, two suppliers could result in an increased cost to the government.

Now on p. 22.

Draft Report at 67. The same conclusions were reached by Treasury Department experts who conducted the 1996 Currency Paper Study that is cited in the Draft Report. Such a complete failure, however, would be unacceptable, especially if it threatened the ability to protect and maintain the U.S. currency supply, which is BEP's ultimate mission.

Now on p. 22.

Thus, it is hardly surprising that the Draft Report abstains from making any assertion that the GAO's recommendations would actually be cost-effective. At the same time, the Draft Report disregards the huge potential cost to the taxpayer of the efforts required to establish a second source, estimated by the government to be between \$20 and \$150 million. Draft Report at 42. The Draft Report also fails to consider the substantial risk of a serious disruption to the currency supply that would be caused by the exclusion of Crane from a procurement of technically sophisticated currency paper.

See GAO Comment 13.

The bottom line is that the GAO agrees with the 1996 Currency Paper Study when it concludes that, even after expending large sums of money for facility construction and technology transfer in order to establish a second source, it is quite possible that the government would be required to pay higher total costs in every year thereafter to maintain two paper suppliers. With an adequate stockpile of currency paper, and no evidence of a real risk of a disruption in the supply chain, there is no justification for such a wasteful and counterproductive policy.

**F. Important Qualifications to GAO's Recommendations**

The GAO recommendations concerning the possible use of a subsidy or the exclusion of Crane are based purely on the results of a survey of paper manufacturers who were asked whether they were "interested" in bidding and "capable" of producing currency paper. The 12 respondents<sup>2</sup> who said they were interested and capable were then asked what contract concessions they would like the government to offer them to induce them to submit bids. Not surprisingly, the survey results indicated that more bidders would be encouraged to submit bids if the government (1) provided taxpayer subsidies to cover the capital expense of establishing paper-making facilities; (2) provided free access to the currency paper-making technology; (3) offered longer guaranteed contracts; and (4) permitted longer mobilization periods.

See GAO comment 14.

<sup>2</sup> The Draft Report incorrectly identifies the 12 survey respondents as being split between nine domestic and three foreign companies. In fact, two of the firms listed with U.S. addresses are actually headquartered outside the United States. (See Attachment 1.) Therefore, the true distribution is seven domestic and five foreign respondents. In any event, the Draft Report also acknowledges that there are only "four major currency paper manufacturers that are



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Such concessions demanded by Crane's competitors<sup>3</sup> generally do not make good business sense for the government. One of the greatest concerns is that the attempt to establish a second source that can master the technology has a strong chance of becoming a cost-reimbursement nightmare -- a "money pit". If the contractor fails to develop the capability when the money "runs out," then the BEP would be left owning an unused, unwanted and potentially unfinished paper mill that was constructed at taxpayer expense. By contrast, Crane was never offered these concessions but has been able to meet all of the government's needs at a reasonable fixed price.

See GAO comment 15.

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internationally recognized in currency paper manufacturing and security. Only one of the four, Crane & Co., is located in the United States. The other three, Portals Ltd., Papierfabrik Louisenthal, and Arjo-Wiggins are located overseas." Draft Report at 39.

Now on pp. 27-28.

<sup>3</sup> The substance of GAO's survey appears to derive from a February 14, 1996 joint letter to the U.S. Treasury that was sent by two Crane competitors, Crown Vantage of Milford, New Jersey and Portals Ltd. of Basingstoke, England. The letter requested that BEP make four changes to its procurement policies to provide the necessary assurances to new potential bidders. These included a four-year guaranteed term for the contract (rather than a base year plus option years), a split-quantity award procedure, and provisions to permit a new contractor adequate production lead time to prepare for production of currency paper. Although in the past BEP has not offered these favorable terms to Crane, BEP decided to include each of these three provisions in the current open competition. BEP declined, however, to include the "financial incentives" that also were demanded: funding for Contractor Acquired Property or "CAP" (*i.e.*, zero-interest financing for contractor purchase of equipment or facilities, under which the Treasury bears the risk of the loan and covers the cost of making interest payments).

See GAO comment 16.

See GAO comment 15.

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Now on p. 32.

See GAO comment 13.

Moreover, GAO has cited no relevant precedent for the government to make such extreme concessions to inexperienced potential bidders. The Draft Report does suggest that the Defense Department often relies on a “dual sourcing” approach to develop a second supplier for weapons systems. Draft Report at 46. However, according to an authority on Pentagon dual-sourcing, the Defense Department funds the development of a second source only rarely when it is clear that (1) the manufacturing process used by a single-source contractor is inefficient and imposes excessive manufacturing costs on the government; and (2) there are clear opportunities to achieve technological breakthroughs by funding another contractor’s R&D in order to obtain cost savings within a relatively short time horizon.<sup>4</sup>

In the case of Crane’s supply of currency paper, there is nothing to support the concept of dual-sourcing because Crane has already made the necessary investments in new technology and has driven costs down to a reasonable cost per unit price. Indeed, there is no evidence mentioned in the Draft Report suggesting that a government subsidy in the currency paper procurement would lead to any technical breakthroughs that would significantly reduce the cost of manufacturing.

Now on p. 44.

Finally, the Draft Report itself qualifies its recommendations with the caveat that “the overall costs and benefits of establishing a second source would need to be fully explored.” *Id.* at 65. The Draft Report makes clear, however, that it does not constitute such an analysis. Therefore, it would be inappropriate, according to the GAO’s own statement, for either the Treasury Department or the Congress to take any action to follow the recommendations in the Draft Report unless and until there has been such a “full exploration” of the costs, benefits and potential risks involved.

See GAO comment 17.

While there is much merit in the factual findings in the Draft Report, the restricted scope of the review reflected in the Draft Report severely limits the validity of the GAO’s recommendations, several of which are directly contradicted by the factual findings themselves. While competition itself is a well-established goal in government procurement, it is not the ultimate objective. Instead, obtaining the “best value” -- a product that meets the needs of the government at a reasonable cost -- is the ultimate objective. Although price is always a factor to consider, price is not necessarily the most important factor in considering the “optimum circumstances for the procurement of distinctive currency paper.” That being said, BEP has been getting the best value -- indeed, the lowest price.

<sup>4</sup> See Letter to Crane & Co. from General Lawrence A. Skantze, Former Commander of the U.S. Air Force Systems Command, dated July 27, 1998 (Attachment 3 hereto).

See GAO comment 17.

By narrowly focusing only on the pricing issue, the Draft Report has missed the greater issue of exactly which procurement circumstances would provide the best value to the government. Based only on speculative information and assumptions, the Draft Report recommends a strategy that GAO itself admits may not work as intended, with potentially higher costs and serious consequences for the currency supply. If the GAO has defined "optimal circumstances" as achieving the greatest number of bids, then the Draft Report reflects an exercise of looking through the wrong end of the telescope. In light of what is ultimately at risk -- the world-wide credibility and acceptance of the U.S. currency -- it is plain that the risk of error is greater than the hypothetical benefits suggested by the Draft Report.

**III. BEP's Efforts to Promote Competition Have Been Adequate; Recommended Further Efforts to "Enhance" Competition Would Likely Result in Higher Costs and Greater Risk of Supply Disruptions.**

The GAO's factual findings do not support the Draft Report's implied conclusion that BEP has not "done enough" to promote competition. At the outset of the Draft Report, the GAO's thesis is stated as follows:

The optimum circumstances for the procurement of distinctive currency paper would include an active, competitive market for such paper where a number of responsible sources would compete for BEP's requirements. However, these circumstances have not existed because of the unique market for currency paper and some statutory restrictions.

Now on p. 5.

Draft Report at 6.

Thus, according to the Draft Report, the GAO found only two types of obstacles to competition: (1) circumstances caused by the "unique market for currency paper"; and (2) circumstances caused by "some statutory restrictions."

**A. Statutory Restrictions**

The BEP cannot be faulted for statutory restrictions imposed by Congress. In any case, the two statutory restrictions are easily addressed. The four-year limitation on currency paper contracts could certainly be increased to five years, as recommended in the Draft Report, and Crane has no objection to such a change. In fact, although Crane has performed under much shorter contract periods, as noted in the Draft Report, we would certainly benefit from the greater certainty and ease of planning that BEP might decide to offer under longer-term contracts if the law were changed. Any longer than five years, however, would be quite out of the ordinary for traditional government contracts and would impose excessive risk on the government from being "married" to a contractor, e.g., for 6 to 10 years, as the Draft Report notes, was suggested by some potential competitors. In any event, the current competitive solicitation includes provisions for contracts up to 4 years long (twice as long as any contract Crane has previously been offered since 1983). Thus, it is not clear that any significant benefit would be achieved by changing the statute.

See GAO comment 19.

Now on p. 18.

The domestic sourcing legal restriction, the so-called Conte Amendment, has limited BEP procurements of currency paper since 1988 to companies that are 90 percent owned by U.S. nationals. As noted by the Draft Report: "According to the Conference Report accompanying the Conte Amendment, the requirement was to enhance the security capabilities of U.S. law enforcement agencies." Draft Report at 22.

**B. The History of BEP's Efforts to Enhance Competition**

As to the circumstances caused by the "unique market for currency paper," the Draft Report states that "BEP has been aware of the need to increase competition and has made some efforts recently to do so in areas under its control." Moreover, the Draft Report recognizes the history of open competitions held by BEP and also recounts BEP's experience over the past thirty years in attempting to promote competition:

Treasury and BEP completed studies in 1983 and 1996 on what it would take to encourage competition for procuring currency paper. The studies identified the following elements that have affected competition, the first three of which could be addressed in part by BEP: (1) the high cost of the initial capital investment to build or retrofit a plant to produce currency paper; (2) an inadequate start-up period to meet specified paper deliveries; (3) the absence of a guaranteed minimum production commitment sufficient to cover the cost of constructing and equipping a plant; and (4) the ownership and control provision in the Conte Amendment.

Draft Report at 9.

Now on pps. 6-7.

Thus, the Draft Report indicates that BEP was well aware of the concern with obtaining competition, and has at least twice in recent years devoted substantial efforts to studying the currency paper market in detail. The Draft Report goes on to describe BEP's efforts in recent years to enhance competition, while seeing one company after another attempting and failing to meet either Crane's low prices or the government's currency paper requirements:

According to a 1983 Treasury/BEP study on currency paper procurement, during the 1960s, BEP attempted to develop a second source of paper by contracting with Gilbert Paper in Wisconsin for about 3 percent of its annual requirements. This supplier declined to submit an offer on subsequent procurements of currency paper because its prices for a portion of the BEP's needs were not competitive with Crane's prices for the entire BEP requirement. The study also stated that BEP endeavored again in 1982 to encourage competition when it issued a solicitation that would have split the paper requirement among two or more suppliers. This effort also failed because Crane offered a substantially lower offer, according to the study.

In the early 1980s, a British paper manufacturer, Portals, Ltd., sought to sell currency paper to BEP and built a manufacturing plant in Hawkinsville, Georgia. However, the plant closed several years after it was built without receiving any paper contracts from BEP.

In 1991 and again in 1995, BEP entered into developmental contracts with another firm, Crown Vantage Paper Co. (formerly the Communications Paper Division of the James River Paper Company) that had a paper mill in New Jersey, to develop currency paper with an alternate counterfeit deterrence device. However, these efforts did not lead to another currency paper source for a variety of reasons, including the fact that BEP discontinued using the paper that Crown was developing, Crown had problems in meeting BEP's fold endurance specifications, and Crown needed technology that was only available from foreign sources, according to BEP officials.

Now on p. 16.

Draft Report at 18-19.

Thus, the Draft Report gives an account of BEP's efforts to enhance competition that provides a remarkable story. The first competitor (Gilbert) was able to make currency paper but voluntarily decided to withdraw from the market because it could not meet Crane's low prices. In other words, Gilbert could not meet the challenge posed by the price competition, but Crane could.

Now on pp. 15-16 and 28.

In the 1980s, a second competitor, Portals (which has held the legally-protected sole source contract for English currency paper for 300 years) actually constructed an entire paper manufacturing facility in the U.S., in Hawkinsville, Georgia. According to the Draft Report, Portals has stated that it was prevented from utilizing the plant when the Conte Amendment was enacted in 1988, and that Portals then sold the mill in 1989. (See Draft Report at 39-40.) It is our understanding that Portals decommissioned this mill in 1985 and sold it to a Massachusetts company in 1986. Regardless, what is left unexplained is why none of the U.S.-based companies claiming an interest in currency contracts bought the mill and competed for BEP's currency paper contracts with Crane.

See GAO comment 20.

In the 1990s, BEP has twice awarded sole-source development contracts to a third competitor, Crown Vantage (which is widely known to have entered into a joint venture with Portals). The purpose of the contracts was "to develop currency paper with an alternate counterfeit deterrence device." Crown Vantage eventually found that it was incapable of meeting the technical requirements for U.S. currency paper without access to foreign paper-making technology.

**C. The Conclusions To Be Drawn from BEP's Prior Experience**

The conclusion of the Draft Report -- that BEP needs to do more to enhance competition -- does not follow from these factual findings. Instead, the history of BEP's efforts to enhance competition can be reduced to the following three conclusions: (1) BEP held full and open competitions for its currency paper needs and even made special efforts to "develop a second source;" (2) three other well-established paper companies attempted to manufacture currency paper in response to BEP's needs; and (3) in each case the paper company (or the successor owner of the paper mill) concluded either that it could not meet Crane's low prices or it could not meet the government's currency paper requirements.

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Contracts to Crane were awarded on the basis of competitive solicitations during those periods. Therefore, it is readily apparent that Crane, rather than its competitors, continued to win contracts for currency paper based on its low prices, high quality and exceptional reliability. Thus, even with the special efforts of BEP to encourage other domestic paper companies to bid for currency contracts, and even with two sole source development contracts to one competitor, Crane won these competitive procurements fair and square, and the government received the benefit of competition.

See GAO comment 21.

Moreover, the history recounted in the factual findings disproves the suggestions in the Draft Report that Crane's prices might be excessive and that "manufacturing . . . currency paper was relatively simple [when] only one type of paper was used to print all U.S. currency." If currency paper was relatively simple to make and Crane was charging relatively high prices, however, then why did other paper companies either fail to meet the technical requirements of the government after trying, or decide that they just could not meet Crane's prices?

See GAO comment 20.

Consideration of this history also naturally leads to two other fundamental questions: First, why should BEP be encouraged to finance the construction of additional capacity when the owners of the last new currency paper mill established in the U.S. with their own capital decided that it could not be profitably used to compete for BEP contracts? Second, why should BEP be encouraged to finance the construction of additional capacity when the supposedly capable experts in the field (the paper companies themselves) lack the confidence to invest their own money?

See GAO comment 7.

The Draft Report fails to consider these crucial questions, and provides no evidence that BEP is in any better position than the private sector to master the economics of establishing a currency paper plant. Nor does the Draft Report discuss how the government would be protected in the event that a subsidized contractor decides that it cannot meet Crane's low prices or the government's currency paper requirements. If additional collateral were not available, then BEP would end up owning a paper mill (or a partially constructed paper mill).

See GAO comment 23.

Indeed, it is disturbing that the GAO is now recommending that BEP consider asking the U.S. taxpayers to subsidize the establishment of additional specialized currency paper-making capacity in the U.S. when the last such mill that was constructed is apparently idle, was dismantled, or is being used to make an entirely different product -- presumably because its owners were unable to meet either Crane's low prices or the government's currency paper requirements. Certainly the taxpayers should be protected from the risk of paying for the construction of yet a second "white elephant."

See GAO comment 22.

**D. GAO's Heavily-Qualified Recommendations on Subsidies or Exclusion**

The Draft Report states as its first recommendation that the BEP consider either providing financial subsidies -- funding for Contractor Acquired Property ("CAP") -- for a contractor's capital investment in paper-making facilities, or excluding Crane from future procurements. These recommendations have no basis in the factual findings set forth in the Draft Report, but are instead based on speculation concerning the need to develop a second source and the effectiveness of any attempts to do so.

See GAO comment 22.

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Now on pp. 4 and 41.

See GAO comment 22.

Now on p. 22.

See GAO comment 22.

See GAO comment 22.

Now on p. 43.

See GAO comment 22.

Now on p. 43.

See GAO comment 22.

First, these recommendations are based in part on the concern with a possible supply disruption. In its factual recitations, however, the Draft Report states its findings at least three times that “there have not been any disruptions in the supply of currency paper for the last 119 years,” Draft Report at 60; *see also id.* at 8 and 66. Moreover, the Draft Report recognizes that the BEP has recently established a three-month reserve of currency paper to provide a cushion in case of any possible vulnerability to a supply interruption, because foreign sources could supply currency paper if needed within three months. Thus, there is no basis for concluding that avoiding the risk of a supply disruption, which has never happened, is an adequate reason for financing the construction of a second paper mill.

Second, the Draft Report recognizes that it is likely that a large amount of government funding would be required to finance the development of a second source. The paper companies themselves estimated “about \$40 million to build or retrofit the necessary plant and equipment to provide currency paper to BEP.” Draft Report at 30. Crane is aware that other government estimates of the actual final cost range between \$25 and \$150 million. Thus, not only are the numbers quite large but there is likely to be a great deal of uncertainty about the total cost.

Third, the Draft Report expressly disavows any assertion that following such a recommendation will be successful. Indeed, the Draft Reports suggests that such an effort might fail completely to achieve lower costs, higher quality and reliable performance -- the whole purpose of encouraging competition:

It is uncertain whether the government should try to develop a second source for future paper needs, primarily because BEP does not know how prices would change under such an agreement.

Draft Report at 67.

Fourth, the Draft Report confirms the conclusion of the 1996 Currency Paper Study that establishing a second source may well increase the government’s costs:

Prices might increase if more than one supplier were used. For example, if the same quantity of paper is spaced over two or more suppliers, each with substantial capital investments, the unit price for paper is likely to be higher from each. Therefore, although a second supplier could lessen the government’s vulnerability to a disruption in supply, two suppliers could result in an increased cost to the government.

Draft Report at 67.

Fifth, the Draft Report makes no attempt to assess whether or not the seven domestic survey respondents actually have the capability to manufacture paper suitable for use in currency operations, the technical expertise to master recent advances in anti-counterfeiting technology, or an organization and management with sufficient sophistication to meet the government’s national security concerns. Of course, it is well known that many potential bidders may indicate an interest in bidding, but only a fraction of that number will typically submit proposals in any given

procurement. The Draft Report actually goes further by suggesting that the result of following the GAO's recommendations could be a complete failure to obtain bids from any qualified firms:

[A]lthough 12 paper manufacturers told us that they are capable now or would be in the near future of supplying at least part of BEP's currency paper needs if further changes are made, we cannot say with any certainty how many, if any, would submit an offer, whether they would be price competitive with Crane & Co., or if the quality of paper and reliability of delivery would be maintained.

Draft Report at 67.

Sixth, the Draft Report states that two of the potential competitors stated that "they would still be interested in competing for the contract without [the] CAP" subsidy. Draft Report at 43. Thus, the policy recommendation that a subsidy be considered is undermined by the factual conclusion that it is not necessary to encourage multiple bidders to submit offers to BEP.

Finally, the Draft Report indicates that its own recommendation should be considered to be premature:

BEP could consider using other procurement strategy options to help establish a second source . . . although the overall costs and benefits of establishing a second source would need to be fully explored.

Draft Report at 66. Plainly, the Draft Report does not constitute an adequate basis regarding the establishment of a second source, and the GAO itself recognizes that further study and analysis is required before its recommendations could be considered reliable to any reasonable extent.

**E. Rejection of the Subsidy Approach by the 1996 Currency Paper Study**

The 1996 Currency Paper Study was even more emphatic in reaching the same conclusions as the GAO. In that study, the Treasury Department analyzed this issue in much greater detail, including the possibility that maintaining two suppliers at low production volumes would cost more, not less:

The results of this analysis clearly demonstrate that the less costly option is to continue to work with Crane as the bureau's sole supplier . . . . The presence of another supplier would not guarantee competition. . . . It is likely that the end result would be two or more suppliers, each with guaranteed work loads, rather than true competition.<sup>5</sup>

<sup>5</sup> Chris Black, *Report: Crane Best Source For Currency Paper*, Boston Globe, June 27, 1997, at B1, quoting Bureau of Engraving and Printing, U.S. Department of the Treasury, "U.S. Currency Paper Study" (1996).

Now on p. 43.

See GAO comment 22.

See GAO comment 22.

Now on p. 44.



Now on p. 29.

The Draft Report acknowledges the results of the 1996 Currency Paper Study. Indeed, it cites that study's conclusions that "a second source, producing about 40 percent of BEP's needs, would increase costs of producing paper by at least \$21 million per year, and possibly \$37 million per year, depending on the amount of capital equipment the second producer acquired." Draft Report at 46.

The Draft Report's analysis of the experience of the U.S. Mint is also instructive. The Mint had "attempted to develop additional sources by awarding developmental contracts to firms that were interested in competing for future clad material contracts. However, the vendors selected were unable to produce the material at an acceptable level of quality." *Id.* Thus, Mint officials reported that "the Mint did not have much success with developmental contracts," and now those two vendors together supply only five percent of the Mint's needs. *Id.*

See GAO comment 23.

Success at the Mint was achieved, however, not because of financial assistance or sole source payments for developmental efforts, but based on open competition. Mint officials stated that they obtained "a second supplier [who] responded to a competitive solicitation." Thus, the Mint's experience shows that open procurements -- not forced competition through a subsidy -- is the best approach to encourage true competition and technical success.

See GAO comment 24.

The Draft Report, however, fails to reach this obvious conclusion, based on its factual findings. Moreover, the Draft Report does not consider any of the practical difficulties considerations that the BEP would face in managing a subsidized contractor:

Should payments be guaranteed regardless of whether the paper product is delivered by the new contractor in a timely manner and in sufficiently high quality to be fully useable by BEP its printing operations? Should BEP relax the technical requirements for currency paper if the new supplier is unable to meet BEP's specifications? How long should BEP keep financing a supplier that fails to successfully manufacture the paper at all? Should BEP accept and utilize currency paper from a new supplier that is significantly different from Crane's paper? If the requirements are relaxed for a small amount of currency paper made by a new supplier, should they be relaxed for all paper made by Crane, despite the possible impact on public acceptance of U.S. currency?

See GAO comment 24.

Establishing a "second source" or multiple sources for all types of currency paper also would lead to a series of collateral consequences. For example, the GAO itself has reported that Canada, the only G-7 nation that has attempted to maintain two sources for printed banknotes, reported an increase in the cost and difficulty of research and development efforts when it relied on two sources rather than one source.<sup>6</sup> Also, having multiple contractors would directly increase BEP's procurement oversight, administration and security costs.

<sup>6</sup> "Coin and Currency Production, Issues for Congressional Consideration," Statement of Michael E. Motley, Associate Director, Government Business Operations Issues, General Government Division, before the House Committee on Banking and Financial Services, Subcommittee on Domestic and International Monetary Policy, at 11 (June 26, 1997).

See GAO comment 26.

The Draft Report also fails to consider the ultimate implication of the paying for the establishment of a second source: If the Government offered a subsidy for only one contract period, the most likely outcome would be higher paper production costs in the short run and a return to a single supplier in the long run. It would be nearly impossible to sustain competition for more than one or two rounds of bidding without continuing the subsidies or allocating market shares by Government direction. Moreover, once having invested the Government's own money in the development of facilities and capacity with a new supplier, BEP might be compelled to ensure that those facilities are utilized whatever the cost might be. For this reason, BEP rejected the suggestion that CAP be included in the current open procurement after a detailed investigation of the economics of underlying these issues:

The results of this analysis clearly demonstrate that the less costly option is to continue to work with Crane . . . It is likely that the end result would be two or more suppliers, each with guaranteed work loads, rather than true competition.<sup>7</sup>

In the meantime, without the willingness of suppliers to make their own investment in new technology, the R&D function might have to be separately funded by another Federal agency, or perhaps be performed by BEP itself.

**F. Most of GAO's Other Recommendations Have Already Been Implemented**

As noted before, the other recommendations in the Draft Report relating to enhancing competition have, for the most part, been implemented already. The current competitive solicitation includes a longer term of contract, longer mobilization period, increase in the minimum guaranteed production volume, and opportunities to bid for portions of the Treasury's plain and watermarked paper requirements.

The suggestion that BEP "should consider amending solicitation 97-13 and future solicitations to provide financial assistance", however, is completely unfounded. The true lack of any factual or analytical support for these recommendations is revealed by the above-listed caveats, qualifications and limitations. At bottom, the real basis of these recommendations appears to be the headline on page 34 of the Draft Report that some "Paper Manufacturers Report That Competition Continues to Be Inhibited" by the lack of financial support by the BEP for private capital investment and the prohibition of a desired joint venture with a foreign paper manufacturer.

There is no good public policy reason to capitulate to the demands of several of Crane's major competitors (most of which are either foreign-owned or foreign-influenced) for the BEP to

<sup>7</sup> Boston Globe, *supra* n. 5, quoting "U.S. Currency Paper Study."

See GAO comments 7 and 13.

Now on p. 24.

open the federal purse and turn a blind eye while the taxpayers provide funding to repeat a speculative venture that, in the recent past, failed several times to achieve success when private funding was at risk.

Certainly no other G-7 nation with domestic currency paper-making capacity is concerned with the issues raised in the Draft Report, least of all a suggestion that a second source is needed, especially given the present overcapacity in the world-wide market. The truth is that the United States is the only country in the world with an adequate domestic manufacturing capacity that secures its currency paper through open bidding. While the United States has conducted open and accessible procurements for currency paper, no other nation with a significant world currency maintains such open competitions. This conclusion is confirmed by a recent report by the Department of Commerce based on its survey of more than 87 nations.<sup>8</sup> Moreover, neither Crane nor any other U.S. paper company has been permitted to bid for this business.<sup>9</sup>

Despite focused analysis on this possible objective by both the Treasury Department and GAO, no one has been willing to stake a professional judgment on the conclusion that the subsidy

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<sup>8</sup> See "The International Market for Currency Paper," Department of Commerce (Dec. 17, 1997).

<sup>9</sup> For instance, in the United Kingdom, France, Germany, Sweden, Italy, Japan and the Netherlands, the national requirement for currency paper is obtained from a designated sole domestic supplier, and none of these countries open up their contracts to bidding by other domestic suppliers. The Commerce Study also reported that 43% of the countries surveyed secured their currency paper from a sole source without open bidding, and the number rises to 100% when there is an adequate domestic supply located within the country's borders.

See GAO comments 4 and 7.

See GAO comments 6 and 7.

See GAO comments 6 and 7.

approach would succeed in the implied goal of reducing BEP's costs. Every indication, from the recent history of previous attempts by competitors to make currency paper to the Draft Report and the 1996 Currency Paper Study, is that it will not work. The GAO recommendation is an extreme and unprecedented remedy for a system that is not only is not "broken", but indeed is serving the nation's interests extremely well.

**IV. BEP Has Received the Benefit of Fair and Reasonable Pricing; Nothing in the Draft Report Provides Any Evidence or Analysis to the Contrary.**

BEP has been assured of a fair and reasonable pricing for currency paper through several different avenues. First, BEP has conducted annual cost and pricing reviews through an annual contract price-redetermination process from 1988 to 1995. As noted above, an independent review by the well-known expert in government contracting, Professor Ralph Nash, confirmed the fairness of the contract pricing based on the substantial and risky capital investments made under fixed-price contracts.

In addition, BEP has used the fact that other companies have not bid on recent procurements to require Crane to disclose cost and pricing data. Crane has made full disclosure of its costs and its price estimating system for that reason, and also because BEP issued several contracts that required Crane to re-submit pricing proposals and negotiate a "price redetermination" annually. Finally, the fairness of negotiated prices has been verified through pricing proposal audits and post-award audits of Crane's internal records -- Crane has offered DCAA auditors broad access to all cost or pricing data, records of incurred costs and information relating to Crane's estimating system over the past six years.

The current procurement, however, eliminates the price-redetermination provisions in favor of a firm fixed-price approach. Moreover, if BEP were to receive adequate competition, the pricing regulations under the Truth In Negotiations Act provide that the Government would then be required to rely on the competition itself to assure price reasonableness, rather than the submission of cost or pricing data and audits of Crane's accounting system.<sup>10</sup> Thus, the several avenues by which the Government has assured itself of price reasonableness may soon no longer be available.

Every one of the 17 contract pricing actions during the period 1988-1997 was fully authorized and contemplated by the Federal Acquisition Regulation. In every case, the government's financial interests have been well protected through determinations of fair and reasonable pricing, through the full disclosure and auditing of Crane's cost and pricing data, and through the settlement of unresolved pricing based on the retrospective actual and audited cost

<sup>10</sup> See FAR 15.305(a)(1); FAR 15.402(a).

results. Negotiated prices have been also been quite fair when judged by other reasonable standards, including historical trends and the prices charged by Crane's competitors.

**A. Fair, Reasonable and Appropriate Pricing in 17 Pricing Actions**

The Draft Report repeatedly asserts that BEP has been "unable to determine" fair and reasonable pricing in 13 of its 17 pricing actions over the past 10 years, and implies that these pricing actions were inappropriate. While the Draft Report implies but does not conclude -- nor does it provide any evidence or analysis -- that negotiated prices may not be fair and reasonable, the evidence is clear that the BEP's pricing actions fully protected the government's interests. As a matter of fact, all 17 pricing actions were well within established government contract management guidelines and regulations.

In the first category, the four pricing actions that occurred between 1988 and 1992, the BEP contracting officer determined that the negotiated prices were fair and reasonable. The second category includes five pricing actions between 1995 and 1997 for which Crane provided the BEP and its auditors complete access to all of its internal cost and pricing data, and certified its compliance with the Truth In Negotiations Act of 1963. This time-honored approach to contract pricing is recognized by Part 15 of the Federal Acquisition Regulation and is widely followed by a variety of federal agencies. Moreover, this contracting technique provides the maximum protection for the taxpayer, as well as the maximum leverage for the government negotiator. The correct answer is that a government agency is not required to determine that prices are fair and reasonable when a contractor such as Crane provides full disclosure of the facts relating to its internal costing and pricing. The point is that full disclosure permits the government to gain the best position to negotiate prices with a contractor. Indeed, the Draft Report identifies no evidence -- nor does it assert -- that negotiated prices were not fair and reasonable. The more obvious conclusion is that the government did receive the best price obtainable, and that the GAO's unspecified concern with the fairness of pricing is speculative at most.

The third category consists of eight pricing actions between 1991 and 1995, for which the BEP had refused to negotiate final pricing until after contract performance was completed. Prices were resolved through the BEP's voluntary acceptance of the recommendations of a neutral arbitrator, Ralph Nash. Professor Nash reviewed the results of government audits of Crane's costs and resolved several cost accounting and legal issues. In addition, he reviewed Crane's proposed rate of profit and concluded that it was within accepted government contract guidelines. By agreement of the parties, the final pricing for four years of unpriced currency paper deliveries was based on actual, audited incurred costs. Because of Crane's large investment in capital equipment, the incurred labor and material costs were significantly lower than Crane's original projections.

Based upon this cost savings -- which Professor Nash determined through his analysis of Crane's actual, audited incurred costs -- the parties agreed in May 1995 to lower the contract price by \$12.7 million from the earlier interim pricing payments. Thus, even though the contracts had been designated "fixed-price," it was not Crane but instead the BEP which actually received the benefit of the substantial cost savings realized by Crane during the 1992-1995 contract period. The BEP accomplished this substantial recovery by refusing to finalize contract pricing for a

See GAO comments 6 and 7.

See GAO comment 6.

See GAO comment 25.

See GAO comment 6.

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period of four years while Crane continued to perform the contract and make timely shipments of currency paper to the government.

Thus, BEP's 17 contract pricing actions over the past 10 years were extremely fair and reasonable. In fact, the BEP's contract administration has generally been well-documented and well within established procurement guidelines and regulations and the sound business discretion of the agency. Under the provisions of the Federal Acquisition Regulation in effect at the time, it was well-established that the analysis of contractor cost or pricing data -- either a cost analysis or a price analysis -- was a legitimate technique to determine a fair and reasonable price, as stated in FAR 15.804-1(a):

Cost or pricing data submitted by an offeror or contractor enable the Government to perform cost or price analysis and ultimately enable the Government and the contractor to negotiate fair and reasonable prices.

48 C.F.R. § 15.804-1(a) (1995).

The contract pricing rules today are similar -- as before, the FAR provides that the contracting officer may use various techniques to determine the prices are fair and reasonable, and is not required to use the techniques listed in the Draft Report:

(a) General. The objective of proposal analysis is to ensure that the final agreed-to price is fair and reasonable. . . . (1) The contracting officer is responsible for evaluating the reasonableness of the offered prices. The analytical techniques and procedures described in this section may be used, singly or in combination with others, to ensure that the final price is fair and reasonable.

...

(c) (2) The Government may use various cost analysis techniques and procedures to ensure a fair and reasonable price, given the circumstances of the acquisition.

48 C.F.R. § 15.404-1 (1997).

The regulation also lists a variety of techniques and procedures for conducting cost analysis in support of a determination that prices are fair and reasonable. Similarly, the regulations provide for a variety of pricing analysis, including the examples listed on page 50 of the Draft Report. However, use of any particular analytical technique is discretionary with the contracting officer.

BEP also achieved substantial price reductions during a number of price negotiations with Crane. In accordance with the pricing regulations, these provided opportunities to ensure that contract pricing was fair and reasonable.

(a) The purpose of performing cost or price analysis is to develop a negotiation position that permits the contracting officer and the offeror an opportunity to reach

See GAO comment 6.

See GAO comment 26.

Now on p. 34.

agreement on a fair and reasonable price. A fair and reasonable price does not require that agreement be reached on every element of cost, nor is it mandatory that the agreed price be within the contracting officer's initial negotiation position.

...

(b) The contracting officer's primary concern is the overall price the Government will actually pay. The contracting officer's objective is to negotiate a contract of a type and with a price providing the contractor the greatest incentive for efficient and economical performance. The negotiation of a contract type and a price are related and should be considered together with the issues of risk and uncertainty to the contractor and the Government. Therefore, the contracting officer should not become preoccupied with any single element and should balance the contract type, cost, and profit or fee negotiated to achieve a total result -- a price that is fair and reasonable to both the Government and the contractor.

48 C.F.R. § 15.405 (1997) (emphasis added).<sup>11</sup>

<sup>11</sup> Thus, the Draft Report is incorrect when it states: "Contracting officers are to determine whether a proposed price is fair and reasonable based on both a cost analysis to ensure the reasonableness of individual cost elements and a price analysis to ensure that the overall price is fair and reasonable." Draft Report at 51. To the contrary, the pricing regulation expressly "does not require that agreement be reached on every element of cost." In addition, the regulation does not provide that cost analysis has a goal that is fundamentally different from the goal of price analysis. Instead, the regulation quoted above expressly provides that "[t]he analytical techniques and procedures described in this section may be used, singly or in combination with others, to

See GAO comment 26.

Now on pp. 34-35.

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ensure that the final price is fair and reasonable.”



From Crane's perspective, BEP has obtained more than its share of the benefit of Crane's efforts to advance the state of the art in currency paper technology. Normally the contractor keeps any cost savings realized under a "fixed-price" contract because the contractor is bearing the risk, and Crane bore substantial risk under fixed-price contracts during the past 10 years. First, Crane conducted most of the research and development efforts without the support of the Government.<sup>12</sup> Second, Crane developed the technology without any guarantee that the BEP would award a contract utilizing the technology that we developed. Third, production under the contracts awarded to Crane during this period was authorized only for one year at a time. Finally, Crane made the necessary investments to accommodate BEP's maximum desired capacity, even though it had no assurance that BEP's orders would exceed the minimum amounts established by BEP's contract.

Despite these risks, Crane offered the Government a fixed price for the paper delivered to BEP. Then after the government refused to close the pricing of three years of contract work, Crane agreed to provide its cost savings to the government by settling the prices for those contracts on the basis of the incurred costs, which were lower than the original price estimates. Given the level of risk imposed on Crane by BEP, the suggestion in the Draft Report that Crane has been taking advantage of BEP does not fairly reflect the actual facts.

**B. Comparison of Crane's Prices to Other Standards**

The reasonableness of Crane's pricing is also demonstrated by comparison to other reasonable standards. Pricing for unthreaded distinctive currency paper (D-39), for example, has been relatively stable for many years. In real terms, however, Crane's prices for unthreaded currency paper have declined over the past 30 years -- between 1965 and 1995 the price per pound for D-39 paper decreased from \$2.62 to \$2.20 in GNP-deflated 1995 dollars. The nominal price for Crane currency paper has increased less than prices for Crane's commercial paper products, and also less than industry-wide prices.

Furthermore, prices paid by BEP for threaded paper have been characterized by steady price reductions in the years following the introduction of new anti-counterfeiting technologies. Simply stated, Crane has provided the benefit of cost savings to the Government in the form of lower prices as a result of our efforts to increase production efficiency and reduce product losses during manufacture. These cost savings became possible only because Crane has committed substantial resources over the past 15 years to upgrading its manufacturing process as well as developing new technologies to meet the BEP's needs for currency paper with unique counterfeit-deterrent features, and to develop and utilize state of the art manufacturing technology while maintaining the character and therefore the stability and acceptance of U.S. currency.

<sup>12</sup> The Draft Report states "the government indirectly paid for much of Crane's development cost" in an amount of \$3.4 million. Draft Report at 59. No such amounts were actually paid by BEP to Crane. Crane is aware of payments amounting to about \$1.1 million under a 1983 R&D contract, but that contract work for BEP did not result in technology currently used in advanced currency designs.

See GAO comment 27.

Now on p. 40.

See GAO comment 28.

Prices paid by BEP historically are also significantly lower than prices paid by other leading nations to their currency paper suppliers, such as Portals Ltd., the British currency paper maker, Louisenthal in Germany and other exclusive producers of the “Euro.” According to the Treasury Department’s 1996 Currency Paper Study, Crane compared favorably to its overseas counterparts:

[E]ach of the five foreign suppliers interviewed are the exclusive currency paper suppliers for their respective countries. Therefore, the nation’s reliance upon a single source for currency paper is typical of the situation in those five major countries and common to this particular market. In addition, our currency paper costs are lower than any of these countries.<sup>13</sup>

It is not clear why the GAO’s Draft Report states that BEP has been unable to obtain any pricing information on foreign currency products. Draft Paper at 11.

While the Draft Report faults BEP for failing to consider the prices of specialty papers used for passports and money orders, a direct comparison is impossible because these and other types of security paper are fundamentally different from currency paper. For example, money orders are used only once, rather than circulating freely for years in repeat transactions. Passport paper, which must circulate for 10 years, and needs to be counterfeit deterrent, but is not used to represent monetary value and provides no interest savings to the Treasury. (See discussion in section V(D), *infra*.) Moreover, durability and distinctiveness of the paper itself is not necessary for the security of these documents. Thus, the products are different, and in fact a different set of paper companies compete for such specialty paper contracts. In any event, a better comparison is made to the historical prices for currency paper purchased by the BEP (which has been declining) and currency paper purchased by other G-7 nation’s (which is higher priced).

**C. Crane’s Cost Accounting and Profits**

As noted above, pricing proposals submitted by Crane have been governed by the usual pricing requirements under the Federal Acquisition Regulation. Crane has not been provided with any special waivers of the cost and pricing rules. Indeed, the fairness of Crane’s contract pricing has been verified by nearly continuous auditing of pricing proposals, the submission of cost or pricing and annual contract price re-determinations.

Crane also is subject to the Cost Accounting Standards under FAR Part 99, and has submitted a CAS Disclosure Statement fully describing its cost accounting methods, as required by procurement regulations and contract clauses. Because the Cost Accounting Standards did not

<sup>13</sup> Chris Black, Boston Globe, *supra* n. 5, quoting “U.S. Currency Paper Study” (emphasis added).

See GAO comment 2.

See GAO comment 2.

Now on p. 8.

See GAO comment 32.

See GAO comment 2.

become applicable to Crane until recently, however, Crane has been making substantial improvements in the accounting system in order to meet regulatory requirements. In addition, Crane has worked with teams of government auditors from different agencies to provide full audit access as required and to provide explanations of the company's accounting system.

While some disagreements are inevitable in cost accounting, Crane financial managers have been working with auditors of the Defense Contract Audit Agency for the past six years. The DCAA has been auditing costs generated by the Crane accounting system, as well as contract pricing proposals and final costs incurred. Crane's understanding is that accounting based on standards rather than individual unit costs is perfectly acceptable for a commercial company such as Crane, and certainly Crane has found that the DCAA auditors understand and respect the Crane accounting system. Moreover, the Draft Report is incorrect when it states that Crane does not periodically adjust its standard costs to reflect actual costs. Draft Report at 56. In fact, Crane conducts a variance analysis and adjusts its standard costs annually, and this effort has been an integral part of Crane's accounting system for a number of years.

See GAO comment 29.

With respect to the recommendations for completing outstanding audits on contract 95-23 and 97-10, we were notified in May that Crane's request for audit of these pricing actions has been approved and the audits are expected to begin this week. With regard to the recommendation that an estimating system review be conducted, GAO should be aware that such reviews are required only if cost or pricing data have been required to be submitted. Indeed, if BEP is successful in obtaining "Adequate Price Competition" consistent with FAR 15.403. BEP will be required to adopt a pricing analysis rather than a cost analysis, making an estimating system review inappropriate.

Thus, adhering to the guidance in the procurement regulations may limit BEP in responding to the recommendation in the Draft Report that BEP should "ensure that the contractor implements acceptable cost accounting and estimating systems for future contract(s) and that they are periodically audited." If multiple bids are received in the pending competition, then BEP may be required to conduct more innovative pricing analyses and less analysis of cost data.

**D. Crane's Cost Control and Reasonable Level of Profit**

In 1995, the arbitration agreed upon by the BEP and Crane provided an opportunity to resolve certain cost accounting and legal issues relating to cost allowability. The recommendation of Professor Nash concerning both pricing and profit were based on Crane's actual costs as audited by the Defense Contract Audit Agency. Professor Nash devoted the bulk of the analysis in his Memorandum Decision to this profit issue. While BEP viewed profit as a percentage of cost, Crane viewed profit as a return on investment ("ROI"), consistent with the practices of a commercial company.

See GAO comment 31.

Professor Nash applied established government guidelines to determine an appropriate level of profit consistent with prevailing standards for a capital-intensive industry, and made recommendations for settling contract pricing for the period 1992 through 1995. In addition,

**Appendix VII**  
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Crane agreed to submit to additional rounds of reviews by Government auditors both before and after the ADR proceeding to confirm the adequacy of its cost accounting.

While the parties were not required to expressly agree on the level of costs in the fixed-price contracts, Professor Nash also found that Crane had demonstrated a history of cost control throughout the performance of the threaded DDC contract:

Crane appears to be very cost conscious and has exerted unusually strong efforts to control and reduce the costs of producing paper for the Bureau.<sup>14</sup>

Indeed, Crane has consistently pursued cost reduction in its operations through programs to improve productivity and lower input prices:

As a company with its roots in the commercial marketplace, [Crane] continued to control costs in the years that were not firmly priced and achieved significant cost reductions for the threaded paper.<sup>15</sup>

These savings resulted from the investments identified by Professor Nash and discussed earlier, as well as Crane's studied management of production variances and the application of new technologies to improve productivity and reduce waste.

These cost reductions were shared with the Government in the form of lower pricing proposals. Indeed, the negotiated price for unthreaded paper reflects these kinds of cost control efforts by Crane, so that BEP received the benefit of Crane's investments without bearing the risks that Crane faced under the terms of the fixed-price contracts.

See GAO comment 31.

<sup>14</sup> Memorandum Decision from Ralph C. Nash, Jr. to Peter H. Daly & Thomas A. White, Jan. 30, 1995, at 12.

<sup>15</sup> Nash Memorandum Decision at 5. The "years that were not firmly priced" were the years that were not prospectively negotiated because of the impasse between the parties. As Professor Nash noted, however, "it was actually the Government that benefitted from the late pricing." *Id.*

**V. The Draft Report Concludes that There Is No Significant Risk of Supply Chain Disruption, But Ignores Prior GAO Testimony on the Possible Loss of Enormous Budgetary Benefits from Sophisticated Counterfeiting.**

**A. The Low Risk of Supply Disruption**

The Draft Report identifies no significant risk of supply disruption. Crane agrees with the Draft Report statements that: "Quality has not been a problem" and "there have not been any disruptions in the supply of currency paper for the last 119 years." Draft Report at 49, 60. The GAO's understated findings, however, deserve amplification. Crane has a long history of unmatched service to the Government and has never missed a scheduled delivery to BEP -- more than 100 years of persistently high-quality currency paper delivered with the utmost reliability.

Crane's history of excellent past performance speaks volumes about the actual risk of a future interruption of currency paper supply. The GAO's review also included a study of BEP's "contingency plan for critical materials." Thus, the GAO had an opportunity to review Crane's continuing investments in new technology, manufacturing facilities and new equipment dedicated to BEP's needs, along with the fact that every reasonable precaution has been taken to avoid interruptions to the production of currency paper.

The Draft Report approves of BEP's decision to build a three-month inventory of currency paper as a contingency, noting that other suppliers would need three months "to prepare, produce, and ship watermark and threaded paper" to BEP if an interruption in supplies from Crane ever occurred. Draft Report at 60. Moreover, the Government also has other readily available means to abate the low risk of a supply interruption using simple techniques that raise no national security or counterfeit deterrence concerns, according to another recent GAO study that explored the risk of possible currency supply interruptions.<sup>16</sup> These techniques of minimizing risk are far less expensive than the cost of establishing a second supplier simply for the purposes of acting as a "backup." Thus, it is not inappropriate to rely on a single supplier of currency paper -- and indeed, as noted in the GAO findings, "none of the other G-7 countries maintain a second supplier of banknote paper to protect against possible disruptions in the supply of banknote paper." Draft Report at 62.

Finally, Crane urges the GAO to clarify one factual finding at page 61 of the Draft Report, which suggests that Crane held the BEP "hostage" during its performance of a currency paper

<sup>16</sup> Reporting on a 1997 study, the GAO testified that there were several low-impact options available to the government to reduce risk, including stockpiling currency. Reducing the rate at which soiled currency notes are withdrawn from circulation is another simple and low-cost method to reduce the impact of any supply interruption. This approach would involve no direct costs to the Government, and would have only a gradual impact on the quality of currency, becoming noticeable only after a number of months. See "Coin and Currency Production, Issues for Congressional Consideration," Statement of Michael E. Motley, *supra* n. 6 at 5. By contrast, this same study noted that possible arrangements with private printers or foreign governments raised serious concerns relating to national security and counterfeit deterrence.

Now on pp. 33 and 41.

Now on p. 42.

Now on p. 42.

See GAO comment 30.

See GAO comment 35.

See GAO comment 30.

contract by refusing to supply currency paper. This statement is not accurate. A fair and accurate statement of this matter is set forth in Attachment 1, and we urge that the discussion of the events of June 1995 in your final draft be modified accordingly.

**B. The Real Risk to the Currency Supply: Counterfeiting**

See GAO comment 36.

The Draft Report's attention to the potential for supply interruptions as the only area of vulnerability related to currency procurement is short-sighted, and completely ignores the very real threat of disruptions from high-technology counterfeiting. Recent developments in counterfeiting and anti-counterfeiting technology have been explored in news articles, as well as in prior reports and statements by the GAO, the Treasury, Secret Service and other executive agencies. The security of U.S. currency is a very serious matter. According to government experts, counterfeiting is "a direct threat to the physical safety and economic well-being of America" as well as "threat[] [to] national security and foreign policy interests."<sup>17</sup> Thus, it is not surprising that the GAO noted that the "Treasury and Secret Service . . . consider any counterfeiting to be a serious problem."<sup>18</sup> The evaluation of currency paper necessarily involves consideration of the economic nature of currency and the issues relating to anti-counterfeiting technology, deterrence and enforcement.

Since the mid-1980s, the nature of the threat of counterfeiting has changed dramatically. Initially, the Secret Service was concerned with color photocopying technology that posed a serious threat of widespread amateur counterfeiting. More recently, there has been a dramatic increase in the use of personal computers and high-quality color ink-jet printers to manufacture small volumes of currency on an "as needed" basis.<sup>19</sup> In the intervening years, however, the

<sup>17</sup> "Counterfeiting of U.S. Currency Abroad," Statement of Robert E. Sims, Senior Advisor, International Narcotics and Law Enforcement Affairs, before the House Committee on Banking and Financial Services, at 2 (Feb. 27, 1996).

<sup>18</sup> JayEtta Z. Hecker, General Accounting Office, Report to the Hon. John M. Spratt, Jr., House of Representatives, *Counterfeit U.S. Currency Abroad: Issues and U.S. Deterrence Efforts*, at 11 (Feb. 1996).

<sup>19</sup> See Letter from Secretary of the Treasury Robert E. Rubin to the Hon. Richard O. Conaboy, U.S. Sentencing Commission, dated March 5, 1998.

Government became aware of a new development: a sophisticated \$100 bill counterfeit “Supernote” that evaded detection using some of the new anti-counterfeiting techniques. Federal officials suspected that these counterfeit “Supernotes” were being manufactured under sponsorship of a foreign government to create substantial overseas reserves of counterfeit bills and possibly to undermine confidence in U.S. currency.

During these years, it is estimated that counterfeiting increased dramatically, both domestically and overseas. According to the Secret Service, “the amount of counterfeit currency passed on the public in the United States . . . increased from \$14 million in 1990, to \$34 million in 1995.” The Secret Service estimated that “69% of counterfeit currency passed in the United States was foreign produced.”<sup>20</sup> According to the GAO, the Secret Service also estimated that the amount of counterfeit currency detected overseas “increased 300 percent, from \$30 million in fiscal year 1992 to \$121 million in fiscal year 1993.”<sup>21</sup> The GAO also reported that three-quarters of the value of all counterfeit notes is accounted for in counterfeit \$100 notes.<sup>22</sup> Although the source of such “Supernotes” was never verified publicly, Federal enforcement officials took this threat seriously. As described in testimony by the Comptroller General, the availability of high-quality overseas counterfeit notes posed a threat to security that could not be ignored.<sup>23</sup>

In response to this national security threat, Crane worked closely with BEP to develop a “New Currency Design” currency with additional anti-counterfeiting technology, including a large, denomination-specific watermark and a security thread with denomination-specific fluorescent colors. More apparent to the public were the new printed features, including the use of color-shifting inks, additional microprinting, and a change in the portraits of high-denomination notes. In addition, the new notes included covert security features. This “New Currency Design” currency was introduced into circulation in March of 1996, with the new \$100 note. The new \$50 note was introduced in late 1997, and the new \$20 note was unveiled in May of this year.

Crane has made major investments to the development of the non-apparent polymer thread, the thread insertion techniques and watermark technology over the past 15 years. Crane

<sup>20</sup> “Counterfeiting of U.S. Currency Abroad,” Statement of Eljay B. Bowron, Director, U.S. Secret Service, before the House Committee on Banking and Financial Services, Subcommittee on General Oversight and Investigations, at 2 (Feb. 27, 1996).

<sup>21</sup> JayEtta Z. Hecker, *supra* n. 18.

<sup>22</sup> “Treasury Efforts to Combat Counterfeiters,” Statement of JayEtta Z. Hecker, Associate Director, International Relations and Trade Issues, National Security and International Affairs Division, General Accounting Office, before the House Committee on Banking & Financial Services, Subcommittee on General Oversight and Investigations, at 4 (July 10, 1997).

<sup>23</sup> “Government Planning: Achieving GPRA’s Objectives Requires Strong Congressional Role,” Statement of Charles A. Bowsher, Comptroller General of the U.S., before the Senate Governmental Affairs Committee and the House Committee on Government Reform and Oversight, at 10 (March 6, 1996).

See GAO comment 36.

has also purchased \$65-70 million in specialized equipment and invested in excess of \$20 million in research and development to lower material and production costs while incorporating BEP's security features in the traditional linen-based paper product.

The introduction of these new security features has assisted in deterring widespread counterfeiting without changing the linen fiber content, texture and durability of U.S. currency, or the overall "greenback" design, all of which have characterized the world's most easily-recognized currency for generations. As described by the Chairman of the Advanced Counterfeit Deterrence Steering Committee: "The changes we have made, which included changes to the design, paper, and ink on the notes, include some of the most sophisticated and proven deterrent measures available while still maintaining the uniquely 'American' look and feel of our currency."<sup>24</sup>

**C. Security Considerations**

The need to maintain confidence in the authenticity of U.S. currency is a matter of national security. Security is maintained by utilizing currency paper and printed designs that are widely recognized but difficult to reproduce without detection, by using uniform production methods to ensure product homogeneity, and by maintaining vigilant counterfeit detection and enforcement efforts.

Because of its unique role, the paper on which currency is printed must conform to the standard size, weight, unique flax/linen fiber content, texture and feel requirements that have made U.S. currency so readily identifiable and accepted around the world. The added security threads, watermark and certain other security features are readily visible upon closer inspection,

<sup>24</sup> "Counterfeiting of U.S. Currency Abroad," Statement of John D. Hawke, Jr., Under Secretary of the Treasury for Domestic Finance, before the House Committee on Banking, Finance and Urban Affairs, Subcommittee on General Oversight and Investigations, at 2 (Feb. 27, 1996) at 2 (emphasis added). The Advanced Counterfeit Deterrence Steering Committee is an interagency committee composed of officials from the Treasury Department, the Secret Service, the Bureau of Engraving and Printing, and the Federal Reserve.

See GAO comment 36.



but are all but impossible to reproduce. Moreover, the paper must meet stringent performance requirements including durability testing to ensure physical longevity (including rip and puncture testing and a 4000 double fold test), and resistance to chemical damage or machine washing.

Also, all sheets of paper supplied to the Bureau must be homogeneous, *i.e.*, they must be as nearly identical as possible. The security threads and watermarks must be perfectly aligned, and there can be only rare instances of pin holes or other defects in the paper formation process. If paper were procured from multiple sources, with a product as complex as the threaded and watermarked NCD, it may be quite difficult and/or expensive to eliminate the unique characteristics of various styles of paper-making machines. Finally, the Secret Service and other Federal enforcement officials must coordinate with the Bureau and the currency paper supplier to develop counterfeit detection equipment that can quickly test a currency note against the security features to determine authenticity.

See GAO comment 36.

**D. The Enormous Savings Provided by Security in U.S. Currency**

When the New Currency Design version of the \$100 note was introduced, the Secretary of the Treasury commented: "The smooth roll out of this note serves to maintain confidence in our currency as well as economic stability . . ." <sup>25</sup> Indeed, confidence in the security of U.S. currency affects the national economy through the confidence of consumers and investors in the stability of the money supply.

The willingness of citizens and foreigners to hold U.S. currency also provides a direct financial benefit to the Treasury. As recognized by the GAO itself, the most concrete measure of the value of the confidence of citizens and foreigners holding U.S. currency is the \$10-16 billion in annual savings to the Federal budget that are realized by the Treasury in the form of avoided interest payments -- U.S. currency in circulation operates as a zero-interest loan to the government that reduces dollar-for-dollar the need for the Treasury to borrow money or issue bonds.

See GAO comment 33.

Beyond the price of paper itself, an analysis of what is truly at stake in currency paper procurement depends on the nature of currency and the basis of its value to the Government and to the economy. Even a slight loss of confidence in U.S. currency or confusion regarding the

<sup>25</sup> "FY 97 Treasury, Postal Service Appropriations," Statement of Robert E. Rubin, Secretary of the Treasury, before the Senate Committee on Appropriations, Subcommittee on Treasury, Postal Service, and General Government, at 9 (June 20, 1996).

authenticity of U.S. currency, either domestically or abroad, would risk a severe financial impact to the Federal budget, the national economy, and to world-wide markets that depend on the dollar.

According to the GAO's National Security and International Affairs Division, the financial value to the Government of maintaining confidence in U.S. currency is described as follows:

Counterfeiting of U.S. currency, if it became widespread, could undermine confidence in the currency and perhaps even reduce the international holdings of U.S. currency and negatively affect the U.S. economy. When U.S. currency remains in circulation abroad, it essentially represents an interest-free loan to the U.S. government. The Federal Reserve has estimated that the U.S. currency held abroad effectively reduces the need for the government to borrow up to \$250 billion a year and thus may lower the government's interest costs by over \$10 billion a year. If confidence in the dollar were undermined, individuals might switch to other currencies, which would reduce this benefit to the United States. It was within this context that the Treasury was called upon to develop better ways to, in essence, monitor the extent of genuine and counterfeit U.S. currency abroad.<sup>26</sup>

More recently, the Department of the Treasury estimated the interest savings to the Federal budget at \$16 billion per year.<sup>27</sup>

Even a slight decline in the overall usage of U.S. currency world-wide would result in major financial losses to the Government. This risk is real, as the members of the European Union have recognized the benefit that the United States realizes by having a currency that is accepted throughout the world. The forthcoming "Euro" is clearly intended to challenge the preference of U.S. dollars as a means of exchange and store of value. Changes in the design or feel of U.S. currency could lead to an erosion of the dollar's dominant position and a loss in the \$10-16 billion economic benefit realized by the Federal budget annually.

<sup>26</sup> "Treasury Efforts to Combat Counterfeiters," Statement of JayEtta Z. Hecker, *supra* n. 22 (emphasis added).

<sup>27</sup> See Letter from Secretary Rubin to the Hon. Richard O. Conaboy, *supra* n. 19.

See GAO comment 8.

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See GAO comments 8 and 36.

Similarly, decreased reliance on U.S. currency resulting from even slight doubts concerning authenticity, such as a lack of uniformity in the manufacturing of the paper by different suppliers, could be serious. In fact, the GAO reported to Congress that a “1-percent decrease in U.S. currency holdings overseas would cost the Treasury \$75 million in annual revenues” -- an amount that is about the same as BEP’s total annual outlays for currency paper.<sup>28</sup>

See GAO comments 8 and 12.

The Draft Report, however, fails to address the vital nature of currency and what is truly at stake, especially if significant changes in currency paper or its procurement are in question. Having failed to address the technical features, security and reliability of the nation’s currency paper supplier, the Draft Report fails to engage in a convincing analysis of the “optimum circumstances” for procuring currency paper. Although price is always a consideration in federal procurement, other factors are more important in the procurement of currency paper.

See GAO comments 8 and 36.

The Draft Report also fails to consider that any amount of potential savings -- which GAO never even attempts to quantify -- would be far exceeded by the budgetary value of currency to the Treasury. The total cost of currency paper amounts to only about \$75 million per year (about one percent of the value of currency to the Federal budget). The actual cost of the paper is only about \$0.005 for the lowest denomination banknotes and about \$0.01 per banknote for the higher denominations. When compared to the annual \$10-16 billion in savings to the Treasury that derive from confidence in U.S. currency, the hypothetical benefit of lower pricing as result of a subsidized competition might be trivial when compared to the potential losses caused by public confusion regarding the uniform quality and authenticity of the currency paper. The simple fact is that the United States has an established, secure, highly reliable single source of paper currency. To try to spread this responsibility to other sources creates a serious risk of reducing uniformity and quality, eroding confidence in U.S. currency, and enhancing the possibility of counterfeiting.

<sup>28</sup> JayEtta Z. Hecker, *supra*, n. 18 *Counterfeit U.S. Currency Abroad: Issues and U.S. Deterrence Efforts*, at 3-4, 45 (emphasis added).

See GAO comments 4, 7,  
12, and 18.

**VI. Conclusion**

Consideration of all the relevant factors bearing on the “optimum circumstances” for procuring currency paper supports the conclusion that the United States is a leader among industrialized nations in the quality, stability, price and security of its currency supply. Through a reasonable competitive process, a single source, Crane & Co., has been selected to work in partnership with the Treasury Department over a sustained period. With the additional measures to enhance competition that have been implemented in the current competition, we believe the constructive recommendations in the GAO report have been adopted by BEP. Beyond these actions, we offer the time honored advice: “If it isn’t broken, don’t fix it.”

**ATTACHMENT 1:  
SUGGESTED FACTUAL CORRECTIONS**

Now on p. 6.

**Page 7**

The Draft Report states: “Nine of the 12 [survey respondents] are domestic paper manufacturers and three are located in foreign countries.” This statement is incorrect. Of the 20 companies listed in Appendix III of the Draft Report, two of those listed as being “Interested in Supplying Currency Paper to BEP” are incorrectly listed as being U.S.-based. In fact, both Domtar and Spixel are Canadian companies. Therefore, the statement should read “Seven of the 12 are domestic paper manufacturers and five are located in foreign countries.”

See GAO comment 14.

Now on p. 24.

**Page 44**

The Draft Report states that under the current solicitation, RFP 97-13, “[t]he mobilization period now ranges from 30 to 45 days for distinctive currency paper without a watermark and security thread to 24 months for new currency design paper with a watermark and security thread.” This statement is incorrect. In fact, the RFP explicitly provides for a mobilization period of up to 24 months for the unthreaded distinctive currency paper, as well as the threaded and watermarked currency paper:

See GAO comment 9.

The lots have been structured to allow offerors to propose on all of the Bureau's distinctive currency paper requirements or specific portions thereof. Several of the lots provide for the possibility of a twenty-four (24) month mobilization period for offerors to gear-up for Type I or Type III production.

See GAO comment 9.

*See* Section B of RFP 97-13. Moreover, the lots identified in the table accompanying the text of Section B make clear that BEP will may award a contract for unthreaded distinctive currency paper with a mobilization period of up to 24 months. Therefore, the factual statement is incorrect, and GAO’s conclusion that the BEP has not allowed for sufficient mobilization time for potential new contractors is unsupported by the language in the solicitation.

Now on p. 31.

**Page 44**

The Draft Report repeats a competitor’s allegation that “potential offerors are effectively precluded from providing distinctive currency paper with security thread and new currency design paper with watermark and security thread.” The current solicitation, however, clearly provides the opposite.

See GAO comment 34.

In fact, RFP 97-13 provides that offerors are required not to utilize in their paper samples any patented security thread that is used in real currency. As a security matter, and in order to avoid mistakes in handling the paper samples submitted to the BEP, offerors are directed by RFP

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Section L-14(i) (“Security Features in Material Samples”) to use a security thread with a “Test Pattern” that is similar to real security thread, but is not the patented security thread used in real currency:

Type I, II, or III material samples shall not contain distinctive fibers or thread which contains distinctive graphics adopted and approved by the Secretary of the Treasury for U.S. currency. Graphics on thread in Type II and III material samples should be representative of the designs and typefaces which would be used in U.S. currency, but should not be the United States distinctive graphics which are protected by Title 18 of the United States Code.

RFP 97-13 Section L-14(i) (emphasis added).

**Page 61**

The Draft Report inaccurately suggests that Crane held the BEP “hostage” during performance of a currency paper contract by refusing to supply currency paper. This statement is not accurate. Indeed, the account of 1995 events appearing on page 61 is factually wrong in other significant respects. Thus, Crane suggests that the final report be clarified to read as follows:

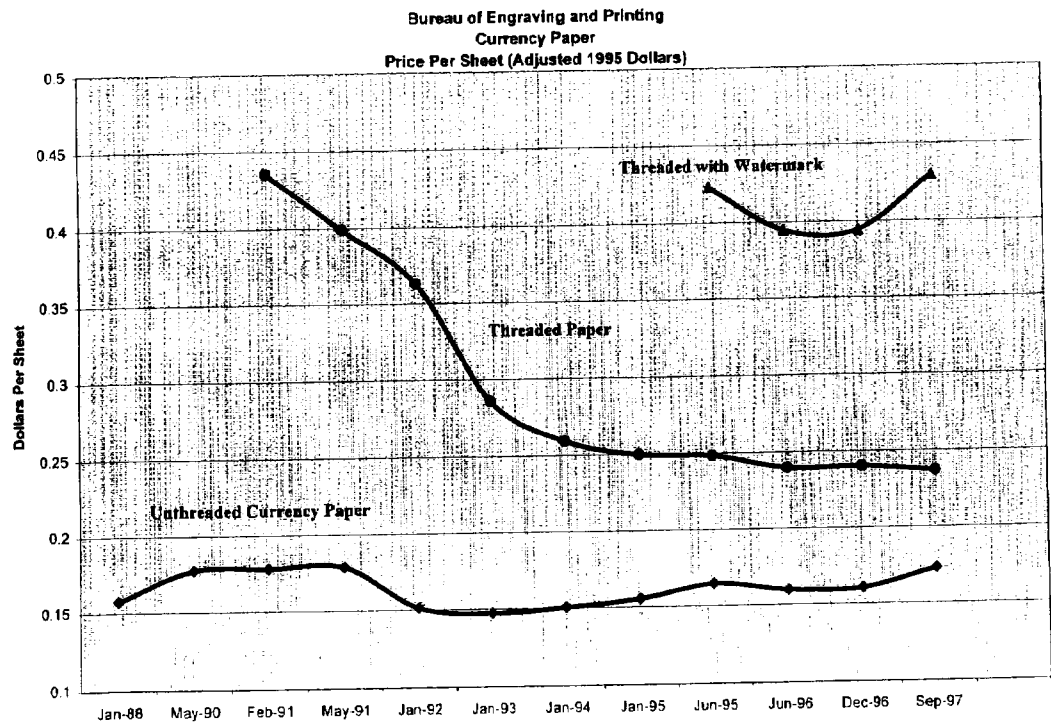
“Furthermore, in May of 1995, the BEP and Crane & Co. negotiated an agreement for Contract 95-23 which was scheduled to begin on June 1, 1995 following the expiration of the existing contract on May 31, 1995. This negotiated agreement was submitted by the BEP to Treasury for approval on May 25, 1995, but approval was held up by Treasury until June 9, 1995. In the interim while no contract existed, Crane & Co. continued to manufacture and ship paper to the BEP based on purchase orders received from the BEP. Once notified that Treasury was resisting approval of the negotiated terms for Contract 95-23, Crane initially indicated to the Treasury that it would not continue to manufacture and ship paper without a formal contract. Subsequently, crane advised the Treasury that it would manufacture and ship paper for another 30 days without a contract to permit further review and discussion of the negotiated terms. Treasury finally approved the contract on June 9th and the contract was signed. The details of these events are contained in a June 21, 1995 Treasury memorandum.”

Now on p. 41.

See GAO comment 30.

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Comments From Crane & Co.

Attachment 2



Attachment 3

**LAWRENCE A. SKANTZE, General USAF (Retired)** [REDACTED]

Special Consultant

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(703) 448-3384

Lansing E. Crane  
CRANE & Company  
Dalton MA 01226

July 27, 1998

Dear Mr. Crane:

In reading the draft GAO Report, I noted a reference to the Department of Defense (DOD) second sourcing on page 46 which stated that DOD used dual sourcing to develop a second supplier for some weapon systems. It was a generalized statement without any specifics, but the way it was worded created the impression that there was a given similarity between how DOD second sourced and how Bureau of Engraving and Printing (BEP) might do it with currency paper. Nothing could be further from the truth.

During my active duty career, responsible for all Air Force acquisition, I was personally responsible for instituting several second sources; including the "Great Engine War" between Pratt & Whitney (P&W) and General Electric (GE), and the second sourcing of the IR Maverick Missile and the AMRAAM missile.

The thrust to create a second source in DOD was driven by either deficient product quality or reliability, or excessive cost, or both.

In the case of the great engine war, the second sourcing came about because of the poor quality and reliability of the P&W F-100 turbojet engine. In the case of the IR Maverick Missile and the AMRAAM, the issues were quality, reliability and cost. Being high technology missiles the initial costs were considerably above what we had expected. Initial IR Maverick Missiles were about \$400,000 each and the initial AMRAAM Missiles were close to \$1 million each. Driving the learning curve through dual source competition led to the last IR Maverick competition in which the missile price at contract award was approximately \$59,000 each. In a similar vein the AMRAAM is down to approximately \$270,000 each. Many other missiles were never second sourced, like the Navy Phoenix and the ALCM because it was clearly not cost effective.

Each and every dual source initiative in the DOD had to demonstrate analytically that the up front investment in capitalizing and qualifying the second source could clearly be amortized over the production run and would produce additional savings from lower costs of production.

Now on p. 49.

See GAO comment 13.

See GAO comment 13.



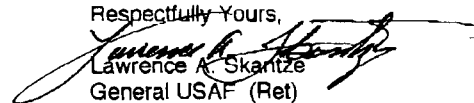
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To imply you can equate DOD second sourcing to a second sourcing of currency paper is disingenuous, at best. Referring to the aforementioned criteria for second sourcing, there is no question about the quality of Crane's product. The GAO states clearly that the quality and delivery commitments of currency paper requirements by Crane are absolutely first class. So the remaining issue is cost or, in your case, fairness of price. In the aforementioned DOD competitions there were clearly identifiable opportunities for technological and manufacturing improvements that could substantially reduce costs. If I look at the Crane cost curves, which have been steadily decreasing over the last 10-15 years, a large improvement in productivity has already been achieved through your steady capital investment over these years. From my personal observation of the currency paper operation, there is probably little room for any additional productivity enhancements. It is also interesting to note that Professor Ralph Nash, the contract arbitrator, noted that Crane's manufacturing operations were "highly mechanized and with a very low labor content."

It is clear to me that Crane has both very high quality, on time delivery, and low cost. That performance does not meet the DOD criteria for justifying a second source. Moreover, there is no evidence that a rigorous cost analysis for second sourcing has been done. If an investment analysis were done to include capital investment, production line initiation, training and qualification of the work force, as well as qualification of the currency paper product, the total investment cost might approximate \$100 million. If you divide the buy, then the currency paper cost will go up for each supplier. Since the second source investment will be paid by the taxpayer, in one form or another, the ability to amortize the investment is highly questionable if not impossible. Savings will be non-existent. The GAO Report itself recognized this possibility.

The GAO position is one of straddling the fence. They state that the price of the Crane contracts can not be proven to be fair and reasonable, but at the same time they cannot and do not assert that they are not fair and reasonable. The issue, to the extent that there really is an issue, is not justifiable when compared to what I have cited and experienced in my personal involvement in DOD second sourcing. To my mind, underlying the whole issue, is the accepted DOD and FAR procurement procedure that single sourcing is a legitimate procurement option and is repeatedly justified and used today by DOD when there is not a compelling case to introduce a second source.

Respectfully Yours,



Lawrence A. Skantze  
General USAF (Ret)  
Former Commander  
U.S. Air Force Systems Command

See GAO comment 13.

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The following are GAO's comments on Crane's letter dated July 28, 1998.

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## GAO Comments

1. Crane said that unlike in other industrialized countries, the single source of the United States' currency paper has been selected in an open and competitive process, for the most part, and that the absence of multiple suppliers is not the absence of competition. As we point out in chapter 2, no firm other than Crane has submitted an offer to BEP for the five solicitations covered in our review. Further, the paper manufacturers we surveyed identified several factors that make it difficult for them to compete, including the length of the currency paper contracts and the exclusion of foreign-owned and controlled firms from supplying paper under the Conte Amendment.

2. Crane said that (1) it has supplied paper at prices that are significantly lower than prices paid by other G-7 nations to their currency paper suppliers; (2) its currency paper prices have decreased after it introduced new technology; (3) in real terms, its prices for unthreaded and unwatermarked paper have declined between 1965 and 1995; and (4) historical comparisons of its prices and comparisons of Crane's prices to currency paper prices of other countries are more appropriate than comparisons to prices of other types of paper, such as passport paper and money orders. BEP was unable to obtain prices paid by other countries, and Crane did not provide us with any information substantiating the prices paid by other countries when we requested it. Later in its letter (page 8) Crane states that Treasury had surveyed other countries and concluded Crane's costs were lower. We found no evidence to support this statement. However, we noted that in an unsolicited 1995 letter to BEP, a foreign supplier offered currency paper to BEP at considerably lower prices than Crane's contract prices.

Crane said its inflation-adjusted prices for currency paper without a thread and watermark and threaded currency papers were lower in 1995 than in 1965. However, we note that the rate of inflation alone is not a good indicator of the fairness and reasonableness of currency paper prices because there is no evidence that the 1965 base price was fair and reasonable. In addition, Crane's prices for threaded and watermarked currency paper were higher for contract 97-10 than under contract 95-23. Threaded and watermarked currency paper was introduced under contract 95-23.

Although we agree with Crane that historical comparisons of its prices and comparisons of its prices to prices foreign countries pay for currency paper would be useful, we also believe that comparisons to other types of paper, such as passport paper and money order paper, would provide useful information. However, none of these comparisons is likely to be definitive by itself. For example, according to BEP, the volumes of currency paper produced by the G-7 nations are considerably less than the volumes produced annually in the United States, and this difference should be considered in any price comparisons. Furthermore, although price trend data provide information that is helpful in assessing the fairness and reasonableness of prices, they were not conclusive because it is not known whether the base-year prices were fair and reasonable. Overall, we believe that competition, where several offers are received, would provide the most objective means for determining whether currency paper prices are fair and reasonable.

3. Crane disagreed with our recommendation to authorize the Secretary of the Treasury to procure currency paper from a foreign source if a fair and reasonable price cannot be obtained from a domestic supplier and suggested that arbitration would be a better alternative, given security issues associated with production in a foreign country. We disagree and believe that given the limited number of suppliers of currency paper and BEP's weak negotiating position, the government's interests would be better protected if BEP had the option to obtain paper from another source until a domestic source can be found that provides the paper at a fair and reasonable price. Although we fully recognize the security concerns associated with production of currency paper outside the United States, our recommendation is aimed at providing a temporary solution similar to what Congress has provided for most federal agencies in general. For example, the Buy American Act, 41 U.S.C. 10a, which limits certain purchases to items produced in the United States, also provides that the limitations do not apply if the cost of the domestic item is determined to be not reasonable. Further, we believe the ability to arrange for a foreign currency paper source would provide BEP with needed leverage should it find itself in the same position it was in during the period covered by our review, when it was unable to determine that Crane's prices were fair and reasonable. We did, however, clarify the intent of our recommendation to recognize Crane's issue regarding security.

4. Crane said the inhibitors to competition we identified in our survey of manufacturers were no different from those identified by BEP and incorporated into solicitation 97-13; thus, according to Crane, BEP has

already adopted our recommendations and it would be premature to take further action until decisions are made on solicitation 97-13. This statement is incorrect. Some factors, including the 4-year contract length and the restriction against the participation of foreign firms, are beyond BEP's control; they cannot be adequately addressed in the solicitation unless Congress makes legislative changes. In addition, there are options beyond willingness to accept "innovative" proposals for financial assistance that could be considered.

5. Crane said we did not explain why the fundamental concepts of fairness in federal procurement should be abandoned for the special benefit of a few companies. Our report does not suggest that fairness be abandoned. To the contrary, we suggested that fairness to all interested competitors be ensured in the acquisition of currency paper through the use of techniques that are provided for in the procurement laws.

The measures that we proposed in our draft report are authorized by procurement statutes to address situations in which questions exist as to product availability and/or whether prices paid by the government in single-supplier situations are fair and reasonable. Further, providing CAP to a domestic supplier is authorized under the FAR and could enable suppliers to overcome the high initial investment impediment, but the value of the CAP would have to be reflected in the evaluation of the offeror's price. Reserving a portion of the requirements to target opportunities for potential alternative suppliers could allow another supplier some time to achieve a production level that would determine whether the supplier could produce quality currency paper at a competitive price. Moreover, given the special legislative provisions that apply to currency paper production, it appears unlikely that potential suppliers would be willing to enter the market without additional action to encourage competition. However, as we have discussed previously, after considering the comments we received on our draft report and reconsidering the uncertainties we identified in our report, we deleted these two recommendations from our final report but recognize that additional measures by Treasury to encourage competition may be appropriate in the future.

6. Crane said that (1) it and BEP have usually been able to reach agreement on prices, (2) independent analyses confirm that agreed-upon prices have been fair, and (3) the report offers no evidence that negotiated prices were anything but fair and reasonable. As pointed out in chapter 3, for the 17 contract actions we reviewed, BEP and Crane were unable to reach

agreement on 8, and BEP was unable to determine whether the prices for 5 others were fair and reasonable. Crane did not furnish convincing data or analyses to us in support of its view that the prices have been fair and reasonable. In any event, the determination of whether the prices are fair and reasonable is to be made by BEP, and, as pointed out above, it was unable to do so in several instances.

7. Crane said our report offers no facts or analysis to support the conclusion that more effort is needed to encourage competition and that the history recounted in our report demonstrates that BEP has focused adequate attention on competition. The report details how BEP has not been successful in obtaining competition, discusses the impediments to competition, demonstrates that BEP has not been in a good position to protect the government's financial interests, and provides options to encourage competition. As the report points out, Crane has supplied virtually all currency paper since 1879. The report notes BEP's efforts in recent years to obtain competition, as well as the inhibitors that have affected its success; and the report clearly points out that certain inhibitors were beyond BEP's control and others were within its control. Further, the report discusses BEP's efforts in connection with its most recent solicitation and the issues interested paper manufactures have raised.

8. Crane said the report fails to address the most important aspect of the currency paper market, which is that the direct benefit to the government of maintaining the quality and reliability of currency is worth more than 200 times the cost of the paper itself. We believe the benefit Crane refers to is the interest earned by the Federal Reserve on government securities that are held to back up the value of currency issued. We agree with Crane that the quality of U.S. currency paper is important. However, we do not understand how this benefit can be linked to the currency paper market. Also, any firm awarded a contract would be required to maintain the quality and reliability of the paper used for currency.

9. Crane pointed out that our draft report incorrectly characterized the start-up period in solicitation 97-13. We have corrected this in the report.

10. Crane, in referring to the arbitration settlement in which \$12.7 million was returned to BEP, said that under a fixed-price contract, such "givebacks" are not the norm. We agree. However, the normal procedure under a fixed-price contract is to establish the price before contract award; but in this instance, the parties were not able to agree on prices for

several years because the government believed Crane's proposed prices were too high.

11. Crane said our report, in discussing the potential for disruptions to the supply of currency paper, does not address the importance of advanced anticounterfeiting technology in the paper itself. Chapter 1 of our report acknowledges that the use of more sophisticated paper is one method of making U.S. currency paper more difficult to counterfeit. Specifications for anticounterfeiting features are included in BEP's solicitations, and any contracts that are awarded must be performed in accordance with these requirements.

12. Crane said the report does not adequately define the optimum circumstances for the procurement of currency paper and fails to explain why "perfect competition" is deemed either unattainable or undesirable by most large industrialized nations. We do define optimum circumstances in chapter 2 and also explain why competition has not been obtained in the United States. Although we attempted to collect data from the other G-7 nations on how they procured banknote paper, it was beyond our scope to explain the merits of the use of single currency paper suppliers in those countries or to compare the procurement processes of the United States with those of the other G-7 nations. Also, as BEP notes, the volume of currency production in the other G-7 nations is less than in the United States; this raises the question of whether there is sufficient volume of currency paper production in other countries to support more than one supplier.

13. Crane said the recommended options in our draft report to provide financial assistance or exclude Crane from some or all of BEP's requirements would be anticompetitive and would jeopardize the currency supply by replacing Crane with an inexperienced supplier. Further, Crane said that the report offered no evidence that these options would be effective and ignores the potential costs to the government and risks associated with these options if they do not work. Also, Crane said that there is no relevant precedent for taking these kinds of actions, and the report does not support the use of the concept of dual sourcing for currency paper production. In fact, the options we suggested—offering financial assistance or excluding Crane from being able to offer on some part of BEP's requirements—are provided for in the procurement statutes and regulations. They are designed to enhance competition in the long run, not lessen it. Although we continue to believe that such types of alternative strategies could be appropriate in the future, we recognize that

there are currently many uncertainties involved and that Treasury may be in a better position in the future to consider whether BEP should take additional measures to encourage competition.

As our report says, DOD has taken steps to help establish a competitive market in some instances in which it had concerns about price and/or quality. Although we agree with Crane that the products involved in DOD's dual sourcing examples are certainly different from currency paper, we believe that the dual sourcing concept is relevant to currency paper as long as there is sufficient volume to economically support multiple suppliers, and the interested paper manufacturers we surveyed appear to believe a sufficient volume exists. Crane pointed out that according to a former Commander of the Air Force's Systems Command, DOD uses this approach only when the manufacturing process by a single source is inefficient and there are clear opportunities to achieve technological breakthroughs by funding another source. However, the current Undersecretary of Defense for Acquisition and Technology and DOD officials we interviewed said that dual sourcing can yield significant improvements in quality and reduction in cost in certain circumstances. They said that this result occurs because, in a sole source environment, there is very little incentive for the producer to drive down cost, and the sole source provider may have an incentive to raise costs because, in subsequent years, price negotiations are based on the preceding year's actual costs. One DOD official we interviewed recognized that dual sourcing may not work for currency paper but did not conclude that the concept was inappropriate for consideration.

Crane also raised other objections to our draft report's recommendations to consider providing financial assistance and excluding Crane from submitting an offer on some of BEP's requirements. For example, Crane said that our proposed recommendations were based on our concern about possible disruptions to the supply of currency paper and that we did not assess the capability of potential suppliers to meet BEP's specifications. We did not base these proposed recommendations on a concern over a supply disruption resulting from a security problem or a catastrophic event, as Crane suggests. Rather, they were based on the difficulties of entering the currency paper market, concerns BEP had over the fairness and reasonableness of Crane's prices over most of the 10-year period covered by our review of BEP's procurement records, questions that exist over Crane's profit levels in the absence of a domestic market that could be used to assess the fairness and reasonableness of Crane's prices, the

difficulties BEP encountered in reaching agreement with Crane over most of the 10-year period, and BEP's lack of leverage in negotiations with Crane.

As Crane notes, we did not independently assess the capability of potential suppliers to meet BEP's requirements. BEP is responsible for making such an assessment in determining the responsibility of a prospective contractor, and we did not propose that BEP award a contract to a firm that could not meet its requirements.

14. Crane pointed out that our report incorrectly identified two paper manufacturers with U.S. addresses as being headquartered in the United States. We made this correction.

15. Crane said that BEP never offered financial assistance to it. However, we noted in the contract file for contract 97-10 that BEP offered various financial incentives to Crane in an attempt to reduce Crane's proposed profits and that Crane rejected these incentives.

16. Crane surmised that the substance of our survey to paper manufacturers was derived from a letter sent to BEP by two of Crane's potential competitors. This letter asked BEP to lengthen its contracts for currency paper, provide a split-quantity award, and allow a longer start-up period. Although we did not use this letter as a basis for our survey, similar factors were identified by several paper manufacturers who responded to our survey.

17. Crane said that obtaining best value should be the ultimate objective in government procurement, not competition. We agree. However, we continue to believe that when competitive procedures are used and a market consisting of a number of responsible sources for the government's needs exists, the expected result would be adequate price competition so that an agency would be likely to obtain supplies at a fair and reasonable price.

18. Crane believes that (1) our findings show that BEP's efforts to promote competition have been adequate; (2) despite BEP's historical use of full and open competition and special BEP efforts to develop alternate sources, BEP's lack of success was due largely to Crane's low prices and the other companies' inability to meet BEP's requirements; and (3) our recommendations to Congress and BEP aimed at enhancing competition are not necessary and would not be beneficial. As Crane notes, our report discusses BEP's efforts since the 1960s to promote competition and the



varied reasons for their lack of success. Also, as Crane notes, BEP cannot be faulted for statutory restrictions, and our report clearly recognizes this. Because BEP did not have procurement records for contracts prior to 1988, we could not obtain detailed information on BEP's procurement practices or efforts, its assessment of Crane's prices, or the extent to which competition was sought prior to contract 88-205. Thus, we cannot provide additional insights on Crane's views of BEP's efforts prior to 1988 other than what has already been discussed in our report.

On the other hand, the report identifies certain BEP practices in the 1980s and 1990s that may have inhibited competition. These practices included contracts with short performance periods and start-up periods. These were among the factors interested paper manufacturers cited as inhibitors to competition. The report also notes that BEP addressed these as well as other issues in solicitation 97-13. Contrary to Crane's view, paper manufacturers we contacted cite the statutory 4-year maximum currency paper contract length and the Conte Amendment provisions as inhibitors to competition. In fact, several of the manufacturers said that they would be interested in submitting offers if the contract term was extended and that they would not need CAP if the term was more than 4 years.

19. Crane said that it is not clear that any significant benefit would be achieved by extending the statutory 4-year limitation on currency paper contracts. In chapter 2, we point out that many potential currency paper manufacturers disagree and said they would be interested in submitting offers if the contract term was extended.

20. According to Crane, Portals decommissioned its Georgia mill in 1985 and sold it in 1986. Officials from Portals and the company that purchased the mill told us that the mill was sold in 1988, after the Conte Amendment was enacted.

21. In replying to our statement that currency paper was easier to produce before security threads and watermarks were introduced, Crane questioned why other paper manufacturers either failed to meet the technical requirements or decided they could not match Crane's prices. The manufacturers told us, as reported in chapter 2, that certain provisions in BEP's solicitations prevented them from competing, not the manufacturing process. The paper manufacturers did not identify Crane's prices as a factor that inhibited competition. Because BEP did not have procurement records for contracts prior to 1988, we could not determine the effect, if any, that the possibility of competition had on Crane's prices.

22. Crane said our report does not discuss how the government would be protected if a subsidized contractor could not meet Crane's prices or the government's requirements. Crane pointed out that Portals abandoned its Georgia plant in the 1980s because it could not meet BEP's requirements and that Gilbert withdrew from the market because it could not meet Crane's low prices. Our draft report proposed that BEP consider the feasibility of offering financial assistance and that any actual use of assistance be predicated on it being cost-effective. Further, according to Portals officials, the company abandoned its Georgia plant due to passage of the Conte Amendment.

23. Crane pointed out that the Mint's experience shows that open procurements, not subsidies, are the best approach to encourage true competition. Although we did not study in detail the market for clad-strip material, Mint officials told us that it is different from the market for currency paper. For example, the officials said that clad material can be used for other products.

24. Crane said our report does not recognize the difficulties and disadvantages associated with establishing a second source, such as ensuring quality, increased research and development costs, and ensuring that subsidized facilities are used in subsequent procurements. Crane also points out, as does our report, that in its 1996 currency paper study, Treasury concluded it would be more economical to work with Crane than to develop a second source. We agree that our report does not discuss all of the advantages and disadvantages of developing a second source; but any ultimate decisions on whether to establish a second source should consider these factors, as well as others, including the prices in contract 97-10. The questions that exist regarding the fairness and reasonableness of Crane's prices and the inhibitors that exist for new suppliers to enter the currency paper market suggest to us that additional exploration of the advantages and disadvantages of establishing a second source could be beneficial in the future if BEP does not get adequate competition otherwise and obtains more information on relevant issues.

25. Crane said that when a contractor provides full disclosure of its cost and prices, a government agency is not required to determine that prices are fair and reasonable. FAR 15.402 requires that contracting officers purchase supplies and services from responsible sources at fair and reasonable prices.

26. Crane said that under the FAR, either a cost or a price analysis was a legitimate technique to determine a fair and reasonable price. This is not consistent with our understanding of the regulations. FAR 15.403-4 requires the contracting officer to obtain cost or pricing data when adequate price competition is not achieved. FAR 15.404-1 provides for both a cost and price analysis to be conducted when cost or pricing data are submitted.

27. Crane said that the suggestion in our report that Crane took advantage of BEP for the contracts covered by the arbitration settlement does not fairly reflect the facts because Crane settled for prices that were lower than Crane's proposed price estimates. We do not make such a suggestion in our report.

28. Crane disagreed with our observation that the government paid for at least some of Crane's cost of developing the currency paper with security thread. We modified the report to show that Crane proposed \$2.4 million to develop the thread, which BEP accepted, according to BEP contract records for contract 91-18. The extent to which additional costs for developing the thread may have been paid for by BEP was not clear in BEP's contract records.

29. Crane said our report was incorrect in stating that Crane does not periodically adjust its standard costs to reflect actual costs. We obtained this information from the 1994 DCAA post-award audit of contract 88-205, option 1, which stated that the contractor submitted inaccurate, incomplete, and noncurrent data for material cost. This was identified by DCAA as a systemic weakness because "the contractor does not reconcile its standards and budgets with its actual cost experienced." This systemic weakness was identified by DCAA as the primary concern for about one-third of the \$3 million overpricing on this option. We modified our report to show the specific contract action affected by this adjustment problem.

30. Crane asked us to revise our description of a meeting that Crane and BEP had regarding contract 95-23. We did not make the change as suggested by Crane because our sources for the statements were a memorandum in BEP's files and statements we obtained from representatives of Treasury and Crane who were at the meeting, and Crane provided no evidence that these statements were inaccurate.

31. Crane commented that the arbitrator applied established government guidelines to determine an appropriate level of profit consistent with

prevailing standards for a capital intensive industry and made recommendations for settling contract pricing for the period 1992 through 1995. In reviewing the decision, we noted that the arbitrator did not cite a source for the “prevailing standards” for return on investment. Crane also cited other statements by the arbitrator on the success of Crane’s efforts to control costs. We note that these statements reflect the views of the arbitrator and would not necessarily reflect the views of other independent parties who would review the same issues.

32. Crane raised the possibility that it may be difficult for multiple currency paper manufacturers to produce homogenous paper. BEP apparently does not share this concern as evidenced by solicitation 97-13, which allows offers from multiple suppliers.

33. Crane said our report failed to consider that savings achieved through competition for currency paper would be far exceeded by the budgetary value of currency to the Treasury. We agree, but we do not believe this should be a factor in obtaining competition.

34. Crane said that a manufacturer’s concern over providing distinctive currency paper threads and watermarks has been addressed by solicitation 97-13. The report recognizes in chapter 2 that the security thread will be provided by the government.

35. Citing our 1997 testimony on Coin and Currency Production: Issues for Congressional Consideration ([GAO/T-GGD-97-146](#)), Crane said there were several low-impact options available to the government to reduce risk of interruption to the supply of currency paper, including stockpiling currency and reducing the destruction rate of soiled notes. Crane did not recognize that we were referring to temporary alternatives to having a backup printing facility. Crane also did not mention, in its comments, that we also reported as other alternatives reciprocal printing agreements with foreign countries and arrangements with the private sector. We pointed out in our testimony that these latter two alternatives involved security concerns because the Secret Service has no investigative authority outside of the United States and that nongovernmental personnel and facilities would be involved if a private sector printer were used. We concluded that issues such as these would have to be discussed with Treasury before decisions on these matters were made.

36. Crane said that our discussion of the possible disruptions to currency paper supplies ignored the threat of disruption due to counterfeiting and

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that Crane's development of anticounterfeiting features has assisted in the deterrence of widespread counterfeiting. Crane also said that the willingness of citizens and foreigners to hold U.S. currency provides \$10 billion to \$16 billion in annual savings to the Treasury and that even a slight decline in the usage of U.S. currency resulting from doubts concerning authenticity, such as lack of uniformity in the manufacturing of the paper, would result in major financial loss to the government. In both of these issues, Crane appears to be implying that only one producer of currency paper is capable of producing paper that has anticounterfeiting features and that meets government standards. We believe that Crane is not the only currency paper manufacturer capable of producing anticounterfeiting features or currency paper acceptable to the public. As pointed out in chapter 2, producers that say they have this capability are located in foreign countries, but the Conte Amendment has made it difficult for U.S. firms to form joint ventures with those firms that have the technological capability. Also, according to a Federal Reserve official, people throughout the world use our currency because of our stable government, economy, and superpower status, in spite of the fact that our currency continues to be counterfeited, not because it is printed on paper produced by a specific producer.

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