



Serving the Vending, Coffee Service and Foodservice Management Industries

Supplemental Testimony Statement of Richard M. Geerdes, NCE
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House Financial Services Committee, Subcommittee on Domestic Monetary Policy,
Hearing, July 30, 2008

Investigative and Fact-Finding Hearing Regarding Effects of Change in U.S. Currency Design as
Mandated by the U.S. Court of Appeals (D.C. Circuit) Decision (May 20, 2008) in "American Council of
the Blind v. Henry M. Paulson, Jr., Secretary of the Treasury"

Specifically, Testimony Regarding Effects of Change in U.S. Currency Design on the U.S. Vending
Industry, and Related NAMA Recommendations

Chairman Gutierrez and other distinguished members of the Subcommittee, this written Supplemental Testimony Statement by me on behalf of NAMA amplifies in greater technical and cost detail the oral testimony I have provided today in this investigative and fact-finding hearing regarding the effects of change in U.S. currency design as mandated by the U.S. Court of Appeals for the D.C. Circuit decision dated May 20, 2008 in "American Council of the Blind v. Henry M. Paulson, Jr., Secretary of the Treasury", and the best way of meeting the currency-use needs of blind individuals.

Thank you for the opportunity to provide this supplemental information to the Committee, and for incorporating this in the record of the hearing.

I am Richard Geerdes, President and Chief Executive Officer of the National Automatic Merchandising Association ("NAMA"), since 1936 our country's national trade association, headquartered in Chicago, representing the vending/coffee service and contract food service management industry of the United States. With more than 2,400 member companies in this over \$45 billion annual sales industry, NAMA's membership is composed of small and mid-sized businesses which are the owner/operators of approx. seven million vending machines across the country in public and private locations, and also the small, mid-sized and large businesses which are the suppliers of bottled and canned and cup beverages, packaged foods and other packaged products sold to the public in vending machines, as well as the manufacturers of vending machines and the equipment used in their operation. NAMA members include companies which manufacture, install and service currency validators, counting and sorting equipment, as well as coin-accepting and handling equipment used to operate vending machines. Approximately 2,000 service company members of NAMA provide food and beverage service on-site to offices, manufacturing plants, schools, hospitals and similar locations throughout the country. NAMA estimates that approximately 20 million Americans purchase a food or beverage item from a vending machine each work day.

My oral testimony at today's hearing, and this written Supplemental Testimony Statement, centers on the impact upon the U.S. vending industry if U.S. currency is redesigned to be tactilely distinguishable, and, if changes are made to U.S. currency to incorporate tactilely distinguishable features, which features would create the least impact on our country's vending industry, and what changes NAMA would prefer.

Very importantly, NAMA offers this information with the intention of helping find various ways of meeting the currency-use needs of blind individuals, who are important customers of NAMA's members, and also best serving the needs of all American taxpayers, who comprise NAMA's total customer base, by keeping down vending machine operating costs to the consumer as much as possible.

Changes in U.S. currency, either as a result of action by the Congress, or initiated by the Treasury Department, or in connection with the May 20, 2008 decision and mandate by the U.S. Court of Appeals for the D.C. Circuit in the case: "American Council of the Blind v. Henry M. Paulson, Jr., Secretary of the Treasury", would have a very substantial impact on the vending industry in our country.

As noted in my oral testimony during the hearing, NAMA prepared and submitted an amicus brief to both the U.S. District Court and the U.S. Court of Appeals in the federal case which I just noted. Drawing on those briefs, my testimony today emphasizes, updates and supplements that information about NAMA's perspective on currency change issues. To provide improved accessibility and use of currency for blind individuals, there are various options to be considered and an opportunity to use innovative technology such as hand-held pocket-size inexpensive currency reader/scanners (such as those provided free of charge to blind persons by the Bank of Canada under a program with the Canadian National Institute for the Blind).

As my testimony highlighted, at the request of this Committee, NAMA once again surveyed our service members and equipment manufacturers to get the most up-to-date information for Congress to consider. The most far-reaching and expensive change to currency for the vending industry would be to change its size, particularly the width of bills.

As an overview, from a vending machine operating standpoint, it is important to keep in mind that the ability of bill validators to correctly validate legitimate U.S. bills is very dependent upon the physical size of the bill being validated. Technical research has shown that bills that are significantly longer than current U.S. bills would not fit into current bill validator storage boxes and would cause jamming in the bill transport mechanism. Longer bills would probably also require software updates. Bills that are significantly shorter could also create jamming in bill boxes and also require software changes. Bills that are significantly narrower than existing bills would require at a minimum software upgrades. Also, sensing techniques used to validate bills require an accurate left positioning so that positioning sensors can properly validate a bill. Whether or not this could be incorporated into existing validators is questionable.

A. Currency Use in Vending Machines and Historical Redesign Costs:

First, for perspective in considering possible changes as to currency denominations over one dollar (especially in light of the terms of the U.S. Court of Appeals decision of May 20, which draws a distinction between \$1 bills and all denominations over \$1)) and then as to changes in currency denominations generally, the extent to which different currency denominations are actually used in vending machines in our country should be noted, and then also the currency redesign costs which have been imposed on the U.S. vending industry over the past decade.

As for one dollar bills, \$1 bills are usable in every one of the seven million vending machine bill acceptors currently in service. Any size reduction of the \$1 bill will require an adjustment to every one of these seven million vending machine bill acceptors. It is NAMA's understanding that if the size of U.S. Banknotes is altered to allow the blind and visually impaired to distinguish denominations, the size of the \$1 bill would have to be reduced. As of this time, Congress has prohibited the Treasury from redesigning the \$1 bill.

As for currency denominations over one dollar, over the past nine years, the federal government has issued one newly designed \$5 note, two newly designed \$10 notes, and two newly designed \$20 notes. Although most vending machines do not accept \$10 and \$20 bills, virtually all of the estimated 300,000 bill changers that support vending operations accept these two denominations. Adjustments to this equipment were required in the case of each of these four newly designed currencies. Also, adjustments were required to both bill changers and currency acceptors when the newly designed \$5 bill was introduced.

As recently as 2005, NAMA believed that the \$5 note would not undergo a second redesign. The \$5 note is seldom counterfeited. NAMA urged the Bureau of Engraving and Printing not to redesign the \$5 note because the cost to the industry would be considerable. In the past five years, with prices rising, more and more vending machines have begun to accept \$5 notes. NAMA now estimates that 1.4 million food and beverage vending machines accept \$5 bills.

In 2006, NAMA learned from the Bureau of Engraving and Printing that the \$5 note was to be redesigned. New \$5 notes were to be issued beginning the spring of 2008.

NAMA estimates that the five redesigns of the \$5, \$10 and \$20 notes over the past nine years have imposed costs on the vending industry of at least \$75 million (300,000 bill changers, each adjusted 5 times at \$50 per adjustment). NAMA estimates the 2008 redesign of the \$5 bill will cost the industry at least \$85 million (300,000 bill changers and 1.4 million bill acceptors, each adjusted one time at \$50 per adjustment).

B. NAMA's Industry Survey, Which Provided the Data in NAMA's Two Amicus Briefs:

With regard to potential changes in currency in order to make currency more usable for blind individuals, NAMA surveyed its members that manufacture currency validators and bill acceptors, currency counting and sorting machines, and currency dispensing equipment. The survey addressed the effects and economic impact on the vending industry of three possible currency design changes: (1) incorporating a single denomination numeral; (2) incorporating Braille in U. S. currency; and (3) introducing variations in length, height ("width") and color of notes. I will discuss the results of the NAMA survey in a moment.

A fourth possible change, not addressed by the NAMA survey but undergoing continuing investigation, would be trimming the corners of currency bills (as apparently envisioned by H.R. 1931, sponsored in 2006 by Congressman Pete Stark of California), as I will noted further below.

A fifth possible approach to making currency more usable for blind individuals, not involving any currency design change, would be the use of small hand-held pocket-size currency bill reader/scanners which read the bill and indicate its denomination by tone, vibration or voice. This approach is used in Canada, in addition to the use of currency with tiny bumps in the upper right hand corner to denominate the value of the currency, as well as the use of currency with larger numbers and contrasting colors to help those with poor vision. Canada's central bank (the Bank of Canada) reportedly considered and rejected the option of producing bills of different sizes as too costly. Use of the small hand-held pocket-size bill reader/scanner option would involve no cost to the vending industry.

In Canada, such hand-held pocket-size bill reader/scanner devices are provided free of charge by the Bank of Canada under a program with the Canadian National Institute for the Blind (CNIB), as described in an article in "The Canadian Press" (Ottawa) on May 21, 2008 simply as costing "more than \$250,000 a year". Technically innovative products such as the small hand-held pocket-size bill reader/scanners used in Canada thus constitute another viable approach for enabling blind individuals to operate vending machines. The small hand-held pocket-size bill reader-scanner approach thus also merits consideration, with the significant benefit of imposing no cost on the United States vending industry.

The survey undertaken by NAMA shows that the costs to the United States vending industry to incorporate some or all of the first three suggestions noted above would be staggering.

As explained earlier, it is estimated that there are about seven million food and beverage vending machines in the United States and that virtually every machine is equipped with a currency acceptor.

According to the NAMA survey, the estimated costs associated with each of the above first three proposals are as follows:

1. Incorporating a single denomination numeral: Retooling costs range between \$50 to \$120 per machine. Resulting total costs to the vending industry would be between \$350,000,000 and \$840,000,000.
2. Placement of Braille symbols on currency: Retooling costs could range from \$100 to \$500 per machine. Resulting total costs to the vending industry would be between \$700 million and \$3.5 billion.
3. Changing the size of U.S. currency, particularly the width of bills: This would have the greatest economic effect on the vending industry. A change in the width of currency would require

replacement of the acceptors at cost of \$500 per machine, or an estimated maximum cost of \$3.5 billion. One survey respondent put the cost at \$6000 for a total replacement of the machine.

4. Trimming the corners, or notching the edges, of currency bills (as apparently envisioned by H.R. 1931, the "Catherine Skivers Currency for All Act" sponsored by Congressman Pete Stark of California in 2006): This would be a fourth possibility. Trimming by use of quarter-circle corner cuts to indicate various denominations might have only a minimal cost to the U.S. Treasury as well as for adjusting bill validators in vending machines. As for this suggestion, further research is required regarding measuring possible retooling needs and associated financial costs for the vending industry. If the same desired effect of trimming the edges would be achieved by putting small notches or similar changes to the sides of the bill there is a good chance that neither transport nor sensing would be affected and therefore no retooling costs would be incurred. As for possible use of corner cuts, current bill validator products are not impacted as long as the radius of the circle in the cut is kept to .75 or less. A 45 degree straight cut also could be used, that could be up to one inch from the corner along the edge to the start of the cut. A straight cut might be preferred as it would offer "less of a corner" than a quarter circle for bills to possibly become snagged in people's wallets and cash registers.

Overall, it is crucial that every possible step must be taken to minimize retooling costs so as not to financially cripple the United States vending industry from any of the above currency design change suggestions.

Further, from a vending machine operating standpoint, it is important to keep in mind that the ability of bill validators to correctly validate legitimate U.S. bills is very dependent upon the physical size of the bill being validated. Technical research has shown:

1. Bills that are significantly longer than current U.S. bills would not fit into current bill validator storage boxes and would cause jamming in the bill transport mechanism. Longer bills would probably also require software updates.
2. Bills that are significantly shorter could also create jamming in bill boxes and also require software changes.
3. Bills that are significantly narrower than existing U.S. bills would require at a minimum software upgrades. Also, sensing techniques used to validate bills require an accurate left positioning so that positioning sensors can properly validate a bill. Whether or not this could be incorporated into existing validators is questionable.
4. The effect of a much larger single denomination number would depend upon the size and placement of the number. As long as the larger denomination number was not placed in a position that interfered with areas that current bill validators use for sensing valid bills, changes to existing validators may not be needed.
5. The effect of adding Braille to bills is again related to the position on the bill where the Braille is placed. Also, because the addition of Braille would increase the thickness of the bill, reduced capacity in the bill stacker box can be expected.
6. The effect of trimming the corners of bills is dependent upon the amount of trimming required. In order to insure the bills are accepted properly into the bill validator and not inserted at an angle, both leading edges of a bill are sensed during insertion. Proper insertion requires that both leading edges be sensed at the same time, assuring proper bill insertion. Excessively trimmed edges could result in rejected bills.
7. The changes referred to in points ## 1, 2 and 3 above would probably require replacement of the validator to accept the new bills. This cost would range from \$250 to \$400 depending upon the customer and the market.

8. The changes referred to in points ## 4 and 5 above would probably require no vending machine retooling if the enlarged number or Braille were properly placed.

In connection with evaluating various possible currency design changes and non-currency design approaches to making U.S. currency more usable by blind individuals, all these above variables and options need to be very carefully considered and weighed as to evaluating the extent of possibly necessary related changes for vending machines and measuring associated economic impact costs for the vending industry.

C. NAMA's Concerns Based on NAMA's Industry Survey:

NAMA wants to note that although the first proposed modification to U.S. currency as discussed above, incorporating a single denomination numeral, would have the least financial impact on the vending industry, this modification would not permit people who are totally blind to determine the particular banknote denomination.

The second proposed currency redesign, incorporating Braille into the banknotes, would be the next most expensive redesign for the industry. NAMA observes that a great many blind individuals, particularly those not blind from birth, do not read Braille. Further, it appears that Braille dots incorporated into banknotes would wear down quickly, especially on the lower denominations of currency that are used more frequently, rendering the Braille unreadable by even an experienced Braille reader.

NAMA is particularly concerned with comments indicated that incorporating Braille in currency will decrease bill capacity in vending machines. Machines that reach bill capacity and cannot accept additional currency cannot dispense product. Also, comments about currency with Braille symbols causing more frequent jams in bill validators are a matter of concern. Service firms have reported large revenue losses when a machine jams, usually due to poor quality currency. Service firms have indicated that jams tend to take place during peak sales periods, such as the lunch hour, maximizing revenue losses.

The third proposed currency modification, adopting a different size note for each denomination, is the most frequently advocated alteration to U.S. currency. It appears to be the only alteration to U.S. currency that would reliably meet the needs of all the nation's visually impaired and blind individuals. It would also be the most expensive for the industry to implement.

In addition to the substantial capital cost to accommodate the newly-sized currency, comments from the manufacturers refer to decreased currency acceptance rates, and increased service calls and bill validator jams.

It also needs to be kept in mind that whatever costs the vending industry would bear if currency is redesigned to accommodate the blind and visually impaired, those costs would be added to the costs + earlier described which the industry has borne over the past decade to accommodate newly-designed, harder to counterfeit currency.

NAMA would note that U.S. currency is the most commonly recognized and accepted currency in the world. It may also be the world's most counterfeited currency. Since the mid-1990's, the Secret Service and the Bureau of Engraving and Printing have worked together to redesign U.S. currency to make it harder to counterfeit, thus preserving the integrity of U.S. currency. NAMA and its members have cooperated fully in this undertaking.

D. The U.S. Vending Industry and Dealing with Costs from Currency as well as Coinage Changes:

In my testimony on behalf of NAMA before this Subcommittee earlier this year on March 11, 2008, regarding H.R. 5512 and U.S. coinage modernization and content/composition changes, I stressed that protection for the U.S. vending industry from facing additional substantial expenses to modify vending machines to handle changed coinage designs and content was crucial for a number of critical reasons.

This concern, and those reasons, are equally important as to protecting the vending industry from facing additional substantial expenses to modify vending machines to handle currency design changes, and any currency reform therefore should be pursued from the following perspective, which applies as much to currency reform as to coinage reform::

1. Vending is a low-profit high capital investment business without much room to absorb cost increases without asking customers to pay more. Avoiding currency change-related machinery modification costs for vending machine owner/operators thus will importantly result in keeping costs down for the consumers who use the country's vending machines and, in turn, thus will help make customer taxpayers dollars stretch further in meeting their personal and family needs.
2. Avoiding millions of dollars of additional machinery modification expenses for the country's owner-operators of vending machines, who are conducting business in a mature but key retail delivery channel of convenience to consumers, is crucial since those dollars are vitally needed for the viability and modernization efforts now underway in the industry that will ensure it can continue to meet the needs of consumers in the future as well as maintain and grow the jobs which the industry supplies to taxpayers across the country.
3. NAMA urges that any currency changes, as well as any coinage changes, be only one element of broad fundamental currency and coinage reform, which should include replacing dollar bills with dollar coins, thereby saving the American taxpayers at least \$600 million a year.
4. NAMA wants to add that a study of foreign currencies and coinage is also highly educational for an additional reason relevant to the U.S. vending industry as well as to the American taxpayer as above, in considering the \$600 million annual savings which would result from replacing dollar bills with dollar coins in the U.S. High value coins, such as dollar coins in the U.S., have also proven helpful to the vending industry in foreign countries with prominent currencies which have been studied in connection with possible currency changes in the U.S. An example is Western Europe. The European Vending Association headquartered in Brussels, Belgium, estimates there are four million food and beverage vending machines in the twelve countries where the Euro circulates. Only five percent of those machines, or about 200,000 machines, accept currency. Specially designed Euro currency, which includes foil and different sized currency to accommodate the needs of the blind, thus has only a modest effect on the vending industry in Europe. In contrast, because virtually all the seven million vending machines in the United States must accept currency, specially designed currency to meet the needs of the blind and visually impaired would have enormous financial impact.

In short, NAMA submits that consideration of currency design changes and related taxpayer cost-saving reforms needs to be viewed in the broadest economic and practicality context, with a view to both protecting the U.S. vending industry from a staggering adverse economic impact, and to helping meet the needs of blind and visually-impaired person, and also to achieving the greatest possible overall taxpayer savings from a combined coinage and currency reform and modernization effort.

E. Conclusion:

In conclusion, NAMA would stress, as NAMA also emphasized in its amicus briefs:

- The most effective redesign of U.S. currency to serve the needs of the blind and visually impaired involves changing the size of U.S. currency. This would be the most costly and disruptive redesign of currency impacting the vending industry. This proposed change, as well as incorporating Braille in the currency, would constitute a staggering financial burden on U.S. consumers and the U.S. vending industry.

- The U.S. vending industry has born very substantial costs over the past nine years to accommodate newly-designed currency. The vending industry faces still more costs with the introduction of the new \$5 bill in the spring of 2008. To stay ahead of counterfeiters, the Bureau of Engraving and Printing has forecast more currency redesigns in the coming years.
- The United States stands alone among the major nations of the world in failing to provide its citizens and businesses with coins having a higher value.
- Higher value coins would benefit both the vending industry and blind and visually impaired.
- With the Susan B. Anthony Dollar Coin issued in 1979, the Sacajawea Golden Dollar Coin issued in 2000, and the Presidential Dollar Coin Program beginning in February 2007, there are now nearly two billion dollar coins in the hands of the American public. These coins are accepted in virtually all vending machines in the United States and are easily identified by the blind. By the end of the Presidential Dollar Coin Program in 2016, there will be an additional eight billion dollar coins in the hands of the public.
- Half of all U.S. currency is one dollar bills. Half of the problem the blind and visually impaired face in recognizing currency would be solved by replacing dollar bills with dollar coins. According to a study conducted by the General Accountability Office in 2000, the federal government would save an average of \$522 million a year in printing and ink costs by replacing dollar bills with dollar coins.
- These savings would be more than enough to provide each blind and visually impaired person with a light-weight, accurate, hand-held device to read currency. Features are now incorporated in all U.S. currency, except the \$1 bill, to facilitate the use of these innovative inexpensive currency scanner/readers.

Respectfully submitted,

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