# PORT SECURITY COSTS IN THE U.S.: A PUBLIC POLICY DILEMMA

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## ABSTRACT

The current geopolitical environment has necessitated the introduction of various measures to enhance security in global supply chains. Seaports, key nodes in these supply chains, are on the forefront to deal with potential acts of terrorism. Accordingly, all seaports are now required to implement new security measures, build fencing, enhance lighting, limit access to unauthorized people, and hire security personnel. The high costs associated with these requirements are becoming an economic nightmare for public ports in the U.S. as well as in other parts of the world. To complicate the situation in the case of U.S. public ports, the level of government funding that the industry anticipated will not be available to implement these changes because of ongoing budgetary problems in the U.S. Although many ports have been enhancing security improvements through their own revenue, they do not see this as sustainable. This leads to an interesting public policy debate as to whether security in public ports is a public good to be funded solely through tax revenues, and/or the private sector should bear some or all of these cost burdens. In the case of foreign ports, the situation is even worse as non-compliance would result in effective prohibition of ships departing those ports from visiting U.S. harbors. The authors conducted a market survey to judge the preferences of port executives in this regard and those findings are the basis of this paper. Although some ports have already announced their funding plans for security improvements, many others both in the U.S. and overseas, are anxiously waiting for an emerging trend in this regard.

**KEYWORDS**: Port Security Regulations, ISPS Code, Maritime Transportation Security Act, User Fees, Public Policy

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## 1. INTRODUCTION

The tragic events of September 11, 2001 have impacted global commerce in very noticeable ways. Every link in international commerce is now seen as a potential avenue for a terrorist organization to carry out their random acts of violence and destruction. No mode of transportation is immune from the possibility of being used for nefarious purposes. The ocean shipping industry which transports bulk of the foreign commerce of nations is a particularly vulnerable candidate for terrorist abuse. The well publicized case of an Egyptian Al Qaeda operative found hiding in a cargo container (with all modern communication capabilities) in the Italian port of Giao Tauro, Italy, in transit to Halifax, Canada, is a harsh reminder of the ingenuity and the technical prowess of today's terrorist organizations ("Trade and Security"). Sea ports, serving the vital nodal role and facilitating the interchange of cargo between the surface-based and waterborne modes of transportation, have come under very tight scrutiny during the past two years in the U.S., EU ("EU Unveils"), and all other major trading nations. The U.S., being on the forefront of terrorist targets, has enacted various provisions to secure its public port and terminal facilities. Corresponding changes are to be implemented internationally through the provisions of the multilateral International Ship and Port Security (ISPS) Code.

There is a general perception that the U.S. has pushed its borders to foreign ports in its fight against terrorism and that it is making the other nations, rich or poor, to pay for its own security (Weiner 2004). Once the new regulations go into effect on July 1 2004, a ship that sails from a foreign port that does not meet the new security standards will be banned from U.S. harbors. Thus, whether a nation has the resources to meet the expected security standards or not, non-compliance would effectively prohibit it from trading with the U.S. As an example, Puérto Cortes in Honduras is reportedly spending $4 million on port security, an expense it can ill afford (Weiner 2004). The Canadian port sector is strongly lobbying its government for security grants similar to those available in the U.S. (Tower, 2004). Even within the U.S., there is considerable debate as to the need for an immediate funding mechanism for the new security-related expenses mandated by the government. This is augmented further because of the highly competitive nature of the North American port sector today which has led to most large ports already incurring high expenses to accommodate bigger ships and update their facilities. Their efforts to remain competitive with neighboring ports and keep up with rapidly increasing ship sizes and other technological developments do not leave them with a financial cushion for other new expenses.

The objective of the paper is to contribute to the ongoing public policy debate on funding mechanisms for port security-related expenses. The discussion is limited to the case of U.S. public ports. The paper provides a brief summary of the new maritime security regulations followed by a review of published empirical data on the estimated costs of compliance with the new regulations. This is followed by a discussion of the authors' findings from a survey of top port executives and how it relates to various measures proposed in the U.S. and elsewhere to fund security-related expenses, and concludes with public policy recommendations.

## 2. SECURITY REGULATIONS

The international community, under the auspices of the International Maritime Organization, has adopted a number of resolutions and conventions during the past two decades beginning with the IMO Resolution A.545(13)—Measures to prevent acts of piracy and armed robbery against ships, signed in 1983. However, it is the International Ship and Port Security (ISPS) Code--amending the SOLAS 1974 Convention (resulting from the IMO Diplomatic Conference held in December, 2002)--that establishes unprecedented requirements on the maritime industry worldwide. The Code seeks to establish an international framework of co-operation between governments, government agencies and the shipping and port industries in order to detect and take preventive measures against security incidents affecting ships or port facilities used in international trade. It is divided into two parts. Part A of the Code contains detailed mandatory security requirements for federal governments, port authorities, and ship companies. Part B is non-mandatory and provides guidance for carrying out the provisions of Part A.

The U.S. regulations affecting port security are codified under the Maritime Transportation Security Act of 2002 (MTSA 2002). Key features of the MTSA are listed below:

- Requirements for port, facility, and vessel vulnerability assessments
- Preparation by the Secretary of Transportation of a National Maritime Transportation Security Plan and Area Plans for each U.S. Coast Guard Captain of the Port Zone
- Development of security plans for certain facilities and commercial vessels
- The issuance and use of Transportation Security Cards for personnel whose responsibilities require them to access secure places aboard ships
- Establishment of a permanent program of grants to facilitate the enhancement of maritime security
- Assessment by the Secretary of Transportation of the effectiveness of the antiterrorism measures at foreign ports
- Establishment of an enhanced system of foreign seafarer identification
- Creation of a Maritime Security Advisory Committee at national and area levels
- Installation and operation of Automatic Identification Systems aboard certain commercial vessels
- Establishment of a program to better secure international intermodal transportation systems, to include cargo screening, tracking, physical security, compliance monitoring, and related issues
- Provision of civil penalties for violation of statutes or regulations
- Extension of seaward jurisdiction of the Espionage Act of 1917 to 12 nautical miles offshore of the territorial sea baseline
- Codification of the U.S. Coast Guard Sea Marshall program and consideration of utilizing merchant mariners and other personnel to assist the Coast Guard
- Requirements that shipment data be provided electronically to U.S. Customs prior to arrival or departure of cargo
- Reporting by the Secretary of Transportation to Congress on foreign-flag vessels calling at U.S. ports
- Development of standards and curricula for maritime security professional training

The new security regulations required submitting security plans for ships and ports by December 31, 2003. The plans are to be fully implemented globally by July 1, 2004 and are expected to assess threats and close security gaps such as through the installation of surveillance systems and improved access controls. In the U.S., a good number of the ships and port facilities missed the December 31 deadline to submit the security plans to the Coast Guard as required by the Maritime Transportation Security Act of 2002. As of Feb. 2004, 600-700 of the 8,500 vessels and 200-300 of the 3,200 shore facilities had not filed their security plans and were to be fined $10,000 by the U.S. Coast Guard. A good indication of the magnitude of the administrative work involved is the drastic increase in number of Coast Guard personnel hours involved in handling maritime security tasks--from a few thousand hours prior to 9/11 to 91,000 hours for the first quarter of 2002 (Levine 2004). A membership survey by the American Association of Port Authorities (AAPA) in 2003 identified many security-related issues of concern for the ports (in addition to their concern about funding sources). In brief, these include security training, handling of hazardous materials, access control/perimeter security, coordination with local, state, and federal law enforcement and emergency response agencies all of which would entail huge monetary as well as planning commitments (AAPA Port Security Survey 2003).

## 3. COST ESTIMATES OF PORT SECURITY REGULATIONS

Table 1 summarizes security expenses incurred by the ports in fiscal year 2001 as reported in the MARAD Annual Public Port Survey 2003. 57 of the total 87 AAPA U.S. members responded to the survey and they included 21 of the top 25 container ports in 2001 and 17 of the top 25 U.S. ports in 2001 handling foreign and domestic waterborne cargo. Given the total port operating expenses of $1,699,318,000 (of the 57 responding ports) in fiscal year 2001, the security-related expenses amounted to 3.74% of the total operating expenses. In contrast, the estimated costs of complying with the new security regulations will be about 10% of their operating budget (Levine 2004)

**Table 1 - U.S. Public Port Expenses for Security in FY 2001**

| Region | Expenses (US$) |
|---|---|
| North Atlantic | 10, 782,000 |
| South Atlantic | 23,816,000 |
| Gulf | 10,697,000 |
| North Pacific | 1,835,000 |
| South Pacific | 13,083,000 |
| Great Lakes | 189,000 |
| Territories | 3,161,000 |
| U.S. Grand Total | 63,563,000 |

Source: MARAD Annual Public Port Survey 2003

A survey conducted by the American Association of Port Authorities gathered information on public port security budgets, summarized in Table 2 (AAPA Port Security Survey 2003). It reported a 56% increase in average spending by the U.S. public ports, from $1.6 million before 9/11 to $2.5 million in the post 9/11 era. A majority of the survey respondents indicated their dependence of transportation security grants from the federal government for further developments and security enhancements. AAPA reports that only one-fifth of the total amount requested by member ports was approved for funding. An earlier study by AAPA in 2002 found that the survey respondents had spent close to $49 million of their own resources for security related

expenses after 9/11 and were expecting to invest another $287 million in security personnel, gate/entry controls, surveillance systems, lighting, X-ray equipment, and fencing (AAPA Port Security Survey 2002).

**Table 2 - Public Port Security Expenses: Pre vs. Post 9/11**

| Range of Security-related Expenses | Pre 9/11 | Post 9/11 |
|---|---|---|
| None | 3 | 1 |
| >$100,000 | 5 | 2 |
| $100,000-$500,000 | 10 | 12 |
| $500,000-$999,999 | 4 | 4 |
| $1,000,000-$1,999,999 | 5 | 6 |
| $2,000,000-$4,999,999 | 8 | 8 |
| $5,000,000-$9,999,999 | 2 | 2 |
| $10,000,000 and over | 1 | 4 |
| Totals | 38 | 39 |

Source: AAPA Port Security Survey 2003

The OECD has published a report assessing the costs and benefits of the maritime security measures. It estimates the initial and subsequent annual costs that carriers will incur in complying with the new regulations. Although it provides some approximate cost information on certain aspects of port security, it does not provide conclusive information in this regard—see Table 3. Furthermore, the report placed relatively low level of confidence in the effectiveness of security assessments and security plans, the two items for which it estimated approximate costs.

**Table 3 - Cost Impact of ISPS Code on Port Facilities**

| ISPS Code Port Facility Provisions | Initial Cost $million | Yearly Cost | Indirect Costs |
|---|---|---|---|
| Security Assessment | 27.9 | $800,000 | Undetermined |
| Security Plan | 27.9 | $800,000 | Undetermined |
| Security Officer | Undetermined | Undetermined | Undetermined |
| Training/Drills | Undetermined | Undetermined | Undetermined |
| Security Equipment/Staff | Undetermined | Undetermined | Undetermined |

Source: OECD Security Report (2003)

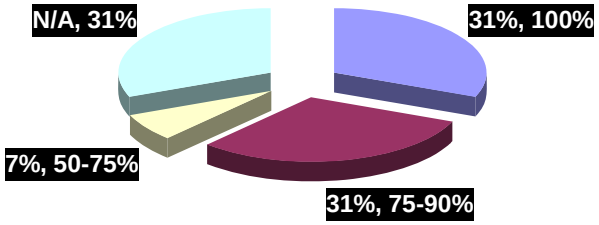
The absence of robust data does not ameliorate the difficulties associated with compliance costs. The overriding theme in an annual review of the predictions and observations of port managers in the U.S. was the paucity of funds to enhance port security in the country (JoC Annual Review and Outlook). The U.S. Coast Guard estimates that ports must spend $5.4 billion over the next ten years on port facilities alone to meet new security requirements of which $1.5 billion is to be spent in the very first year. The Bush administration has budgeted only $46 million for port security. The Senate Governmental Affairs Committee sees a huge disparity in funding for port security compared to the much larger funds made available for airport security and has proposed $300 million in its budget proposal. However, even if the Senate proposal is approved as proposed, ports will have to find matching funds to meet their security needs. The authors conducted a brief survey of the top executives of all U.S. public port authorities to gather information on how they planned to meet the new security regulations and is discussed next.

## 4. AUTHORS' SURVEY OF U.S. PUBLIC PORT EXECUTIVES

The authors mailed a brief questionnaire to a total of 63 port executives in the U.S. and two of its territories, the U.S. Virgin Islands and Puerto Rico. The 63 selected were a judgment sample picked from the list of public port members of the American Association of Port Authorities. The survey recipients were given two weeks to respond by fax and the response rate was 24%. A copy of the questionnaire is attached as Appendix 1 and Appendix 2 lists the names of survey recipients and respondents.

The respondents include a mix of large, medium, and small ports, located on every coast of the U.S. Annual tonnages handled by these ports increased by 16 percent from 2002 to 2003 whereas their security-related expenses increased by 38 percent during the same period. Seventy percent of these ports met all security-related expenses through their own revenue in 2001. In 2002 and 2003, with the availability of newly approved government grants, the number of responding ports relying solely on own revenue stream for security enhancements dropped to 33 percent. However, 67 percent of the responding ports still depend on own funds for meeting 2/3$^{rd}$ of their security expenses. One of the questions in the survey related to the proposed mechanism for funding future security-related expenses. As shown in Figure 1, 31 percent of the respondents wanted federal government grants to cover all security-related expenses, and 69 percent wanted at least 50 percent or more of all such expenses to be met through federal grants. Those ports that suggested less than 100 percent government funding sought the imposition of some level of user fee on the port users. A discussion of these funding options follows.

**Figure 1. Government's Share in Security Enhancement**




Source: Authors' survey of U.S. Public Port Executives

## 5. FUNDING MECHANISMS FOR PORT SECURITY EXPENSES

The fundamental argument here is the economic nature of port security. The consequences of a port shutdown resulting from a terrorist action could be catastrophic and would have multiple levels of economic ramifications locally and nationally as well as internationally. A recent simulation found that the economic impact of such action on a U.S. port would amount to $58 billion (Booze Allen & Hamilton). If increased port security is a public good that would benefit the community at large and the economy beyond local implications, should the government not bear the associated costs? Why should local port facilities assume these costs any more than a local police station assume the costs of the next missile to be fired in a future war? In summary, should

expenses for port security be any different from money spent on military or national defense?

The federal government's position is one of public-private partnership in this regard. Government officials have openly remarked that industry must bear a share of the cost burden (Gilligan 2004). It could be argued that increased security is a service that benefits the users of the port and adds value to the carriers. As per this argument, because the trading community, ports, and other accessorial service providers benefit from this service, it is only rational that each of them makes a contribution toward security enhancements. Furthermore, additional government funds for this purpose are unlikely given the current budgetary woes of the U.S. government. Hence, under the current financial conditions, ports will have to seek alternative revenues through some level of user fees to implement the new security measures.

The imposition of a user fee on port users is not a new concept in the U.S. The controversy involving U.S. Harbor Maintenance Tax (HMT) introduced in 1986 by Title XIV of the Water Resources Development Act of 1986 (P.L. 99-662) is well documented (Kumar 2002). The HMT, originally established at a rate of 0.04% of the value of the cargo, and later raised to 0.125%, is used to recover 100% of the operations and maintenance expenses related to commercial navigation incurred by the U.S. Army Corps of Engineers. Presently, HMT is levied only against import and domestic cargoes, foreign trade zone cargoes, and passengers. The funds collected are placed in the Harbor Maintenance Trust Fund (HMTF) and allocated annually for the operation and maintenance of about 300 coastal ports, 55 Great Lakes ports, 25 inland harbors, and the St. Lawrence Seaway.

There have already been some developments toward user fee implementation for port security enhancements. In the United Kingdom, Hutchison Port is levying an additional charge of $10.20 per export container and $19.40 per import container handled in the Port of Felixstowe as of February 1, 2004 (Barnard, "UK Shippers"). The South Carolina State Ports Authority has announced its intention to impose a user fee for covering security costs from July 1 2004 although this led to immediate condemnation by all the 21 carriers that call the Port of Charleston (Bartelme 2004). The plan is to charge a fee of $1 per linear foot (of the vessel's overall length) against every ship calling the ports of Charleston, Georgetown, and Port Royal, earning $1.7 million annually for the State Port Authority. The only published exceptions to this trend are the major container ports (Kelang and Tanjung Pelapas) in Malaysia where the terminal operators have announced their decision to absorb the $2.6 million cost of implementing the ISPS Code (Bangsberg 2004). However, this is more of a strategic response on the part of Malaysian ports to maintain their recent competitive gains made at the expense of the container terminals in Singapore.

In the survey instrument, the authors proposed a variety of options for funding security-related expenses. These included introducing a surcharge on carriers, shippers, or through customs duties on waterborne imports, or other user fees. One could make a case that carriers should pay a user fee based on the length of the ship, or the value of the cargo handled in port which they could recoup from their customers. Alternatively, a user fee could be imposed on the shippers based on the value of the cargo handled in port. A third option would be to allocate part of the duties collected on imported goods for security enhancements. Other options included in the questionnaire were based on

reported suggestions in the trade media. Understandably, each of the above options would be unacceptable for the parties directly affected by them. Even among the responding port executives, the authors did not find any consensus regarding this issue although a significant majority favored some level of surcharges to offset their expenses. This leads the authors to argue for the following compromise position.

It is recommended that adequate government grants be provided to cover one-half of all new security-related expenses mandated by the new rules. The public ports must raise their own funds to cover the remaining one-half through user fees. It is recommended that a user fee be levied on shippers—importers and exporters—based on the value of goods handled through a port. This amount could be collected similar to the way a surcharge is imposed on each air passenger ticket issued today in the U.S. The argument that user fee implementation would lead to cargo diversion to Canadian and Mexican ports is not credible. Such an outcome was predicted in the case of the HMT user fee and did not materialize. There is even less possibility of this happening with the introduction of security-related costs because every port, whether in the U.S. or elsewhere, would be facing the same regulatory as well as economic pressures for facilitating safer transit of cargoes through their facilities.

## 6. SUMMARY CONCLUSIONS

The paper discusses the impact of newly introduced safety regulations on public ports in the U.S. The ports face a tough financial situation with security expenses projected to rise as high as 10 percent of their operating costs. Although secure supply chains and port facilities have a "public good" characteristic, some level of private contribution to enhance security is unavoidable. The authors recommend that one-half of security mandates be met through government grants and the other half through user fees on shippers based on the value of cargo handled through a port.

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**APPENDIX A.**

## Public Port Security Costs in the U.S.: Who Should Pay?

1. **Name of Port: ……**
2. **Data**

| | 2001 | 2002 | 2003 |
|---|---|---|---|
| Total cargo handled in tons | | | |
| Port security-related expenses (in $) | | | |
| Please indicate what proportion of the funding for port security came from: | | | |
| • Federal Govt. | | | |
| • State Govt. | | | |
| • Port's Revenue | | | |
| • Other (indicate source/s below) | | | |
| | | | |
| | | | |

3. **Your recommendations for funding of port security related expenses:**

| Options | Recommended percentages |
|---|---|
| Government grants | |
| Surcharge on carriers | |
| Based on ship's length | |
| Based on container size (for container ships) | |
| Based on tons of cargo handled in port | |
| Based on value of cargo handled in port | |
| Surcharge on shippers | |
| Based on tons of cargo handled in port | |
| Based on value of cargo handled in port | |
| Through customs duties on waterborne imports | |
| User fees on freight forwarders and customs brokers | |
| Other options: (please fill in below) | |
| | |
| | |
| | |

**APPENDIX B. SURVEY RECIPIENTS (AND RESPONDENTS*)**

Alabama State Port Authority, AL*
Port of Anchorage, AK
Port of Valdez, AK
Port of Hueneme, CA
Humboldt Bay Harbor District, CA
Port of Long Beach, CA*
Port of Los Angeles, CA
Port of Oakland, CA
Port of Redwood City, CA
Port of Richmond, CA
Port of Sacramento, CA
Port of San Francisco, CA
Port of Stockton, CA*
Port of Wilmington, DE*
Canaveral Port Authority, FL
Jacksonville Seaport Authority, FL
Port of Miami, FL*
Port of Palm Beach, FL
Panama City Port Authority, FL
Port of Pensacola, FL
Port Everglades, FL*
Port of St. Petersburg, FL
Tampa Port Authority, FL
Georgia Ports Authority, GA
Department of Transportation, HI
Illinois International Port Authority, IL
Ports of Indiana, IN
Greater Baton Rouge Port Comm., LA*
Port of New Orleans, LA
Eastport Port Authority, ME
City of Portland, ME*
Maryland Port Administration, MD
Massachusetts Port Authority, MA
Duluth Seaway Port Authority, MN*
Mississippi State Port Authority, MS
Delaware River Port Authority, NJ
Albany Port District, NY
The Port of NY& NJ, NY*
North Carolina State Port Authority, NC
Port of Astoria, OR
Port of Portland, OR
Philadelphia Port Authority, PA
South Carolina State Port Authority, SC
Port of Brownsville, TX
Port of Corpus Christi, TX*
Port of Galveston, TX
Port of Houston, TX
Port of Port Arthur, TX
Port of Richmond, VA*
Virginia Port Authority, VA
Port of Bellingham, WA
Port of Everett, WA
Port of Grays Harbor, WA*
Port of Kalama, WA
Port of Olympia, WA
Port of Port Angeles, WA
Port of Seattle, WA
Port of Tacoma, WA
Port of Vancouver, WA
Port of Green Bay, WI
Port of Milwaukee, WI*
Puerto Rico Ports, PR*
Virgin Islands Port, VI*