

monetized safety benefits, as measured through decreased collisions and the resulting decrease in injuries, mortalities, and pollution incidents, the cost of AIS installation for the domestic fleet far outweighs the benefit over a 10-year period (0.25 benefit-cost ratio). This ratio results from the high costs of purchasing and installing the unit (an estimated \$9,330 per vessel), and the types of marine casualties that AIS is expected to mitigate, where damage is not usually severe nor is there significant loss of life. In view of the benefit-cost ratio presented above, the Coast Guard has shared with the Congress all significant information provided by the public that addresses the reasonableness of implementing the statute. A copy of this letter is available in the docket where indicated under **ADDRESSES**.

Because there is not yet a mass market for AIS, the cost per unit in the next few years, when the domestic fleet is required to purchase AIS, is likely to be higher than when it is replaced (around 2012). Because the AIS market is in its infancy, we cannot estimate how much the unit cost will decrease over the next decade. If many manufacturers enter the market, costs are likely to drop through competition. Because manufacturers have a potential world market and a significant U.S. market, many may attempt to capture a segment. Conversely, if only a few players emerge worldwide, AIS costs could remain high. Because manufacturers must engage in a rigorous approval process and cannot be assured that they will recoup research and development costs through unit sales, there is the potential that only a few dominant players will emerge in the AIS market. Because we cannot determine the trend of the AIS market and we did not want to understate the cost for AIS, we assumed that the cost for units in 2012 would again be approximately \$9,000 per unit. It is possible that an AIS unit will not be this expensive to replace.

In terms of security, we estimated that we will not experience a significant benefit from a decrease in risk, as measured in risk points reduced in the N-RAT, as a result of AIS installation. There are two primary reasons for this estimate. First, the N-RAT was an internal Coast Guard tool that was modified to estimate the national benefits attributable to the suite of security rules mandated by the MTSA. The tool was not designed to measure the security benefits of AIS specifically. The N-RAT does not, therefore, robustly capture the risk mitigation potential of AIS. Second, the Coast Guard strongly believes that AIS is critical to maritime

domain awareness. However, we are unable to quantify or monetize the benefits of this Coast Guard mission or the individual contribution of AIS to it.

While the monetized benefit of the rule does not exceed its cost, the Coast Guard believes that AIS has the potential to mitigate a transportation security incident. The Coast Guard recognizes that a single sensor, such as AIS, will not likely prevent a transportation security incident alone—but if AIS can have a mitigating effect on just a single incident, the security benefit could be significant. The Coast Guard must consider AIS in its suite of security rules and has developed a final rule that considers the mandates of the MTSA in light of the high initial costs of purchasing the unit by requiring AIS in VTS areas only for the domestic fleet. We are concentrating our efforts in VTS areas since this is where we can begin accruing the most benefit—for industry, the public, and the Coast Guard—in the shortest period of time. However in response to public comment, in § 164.46(a)(1) and (a)(2)(i), we have removed the carriage requirement of the temporary interim rule for commercial fishing vessels and some small passenger vessels. Through this final rule we are attempting to maximize the return on investment as quickly and as effectively as practical.

Small Entities

Under the Regulatory Flexibility Act (5 U.S.C. 601–612), we have considered whether this rule would have a significant economic impact on a substantial number of small entities. The term “small entities” comprises small businesses, not-for-profit organizations that are independently owned and operated and are not dominant in their fields, and governmental jurisdictions with populations of less than 50,000. We have reviewed this final rule for potential economic impacts on small entities. A Final Regulatory Flexibility Analysis discussing the impact of this rule on small entities is available in the docket where indicated under **ADDRESSES**.

Number and Types of Small Entities Affected

U.S. Flag SOLAS Vessels

Of the affected population, we estimated that of the 438 total U.S. flag SOLAS vessels, 205 are owned by 122 small businesses. The remaining 233 vessels are owned by approximately 40 large companies.

We estimated the cost of an AIS unit per vessel in the first year will be

\$9,330. Of this, \$7,000 is for the AIS unit, \$2,000 is for installation, and \$330 is for mariner training. We estimated that following installation, each AIS will require \$250 in annual maintenance to replace such items as the antenna, keyboard, and display screen. We estimated that the entire unit will be replaced after eight years.

We found that annual maintenance costs will have a less-than-1-percent impact on annual revenue for all small businesses with U.S. flag SOLAS vessels. First-year impacts to small businesses, therefore, are the focus of this analysis. To estimate the revenue impact on small businesses in the first year, the cost per vessel for AIS, \$9,330, was multiplied by the number of vessels owned by each company, then divided by the average annual revenue for each company, as reported in the online databases. Of the 122 small businesses that own U.S. flag SOLAS vessels, we found revenue for 59 of them (48 percent). Table 3 presents the revenue impact for the 59 entities with known average annual revenue.

TABLE 3.—EFFECT OF FIRST-YEAR COST ON AVERAGE ANNUAL REVENUE FOR SMALL ENTITIES OWNING U.S. FLAG SOLAS VESSELS

Percent of annual revenue that is first-year AIS cost	Number of entities with known annual revenues	Percent of entities with known annual revenues
0–3	43	73
> 3–5	5	8
> 5–10	4	7
> 10–20	6	10
> 20–30	0	0
> 30	1	2
Total	59	100

As shown, the final rule will have a less-than-3-percent impact on 73 percent of small businesses owning non-SOLAS vessels in the first year it is in effect. Approximately 88 percent have a less-than-10-percent impact.

Number and Types of Small Entities Affected: Non-SOLAS Fleet in VTS Areas

We estimated that there are 637 small businesses that will be affected by the final rule that own non-SOLAS vessels that transit VTS areas. These 637 companies own 1,349 vessels, representing 46 percent of the 2,963 non-SOLAS vessels affected by the rule. An estimated 1,456 vessels (49 percent) are owned by 150 large businesses, and 55 vessels (2 percent) are owned by State and local governments. There are