

may also render certain safety measures less effective in a transportation security incident compared to their demonstrated performance in an

accident. We also considered average occupancy rates for each mode into the calculations to estimate a relative potential loss of life comparison. The

table below compares the average estimated fatality rates across modes for various passenger-carrying operations.

TABLE 3.—COMPARISON OF ESTIMATED FATALITIES BY MODE AND TYPE OF INCIDENT

| Mode | Representative passenger capacity (potential fatalities) | Estimated average occupancy (percent of capacity) | Estimated average occupancy (number of passengers) | Fatality average rate ¹ (in percent) | | Estimated average fatalities | |
|--|--|---|--|---|-----|------------------------------|-----|
| | | | | Accident | TSI | Accident | TSI |
| Air (14 CFR 135) Commuter Plane | 80 | 78 | 62 | 74 | 80 | 46 | 50 |
| Air (14 CFR 121) Large Pass. Plane | 189 | 75 | 142 | 74 | 80 | 105 | 113 |
| Rail (single commuter car) | 180 | 66 | 119 | 5 | 25 | 6 | 30 |
| Rail (6 car commuter Train) | 1080 | 66 | 713 | 5 | 25 | 36 | 178 |
| Rail (8 car long-haul Pass. Train) | 640 | 66 | 422 | 5 | 25 | 21 | 106 |
| Maritime ² (Subchapter H) Large Pass. Vessels (>100 GT) | 1154 | 72 | 831 | 32 | 46 | 266 | 382 |
| Maritime ² (Ferries—Sub. H & K) | 587 | 72 | 423 | 32 | 46 | 135 | 194 |
| Maritime ² (Subchapter T) Small Pass. Vessels (<150 pax.) | 49 | 72 | 35 | 32 | 46 | 11 | 16 |

¹ Accident data from the National Transportation Safety Board and USCG.

² Typical passenger capacity for USCG Documented vessels.

Table 3 shows that per plane/rail-car/vessel, the estimated loss of life from a transportation security incident is estimated to range from a low of 16 per a typical small passenger vessel to a high of 382 for large passenger vessels. The Coast Guard determined that based on the above comparison and the results of the N-RAT vulnerability scores for vessels that result in two “High” consequence scores, that a threshold of 150 passengers is appropriate. We also looked at the N-RAT vulnerability condition for a “Catastrophic” consequence score and determined that added measures were appropriate for vessels carrying 2,000 or more passengers. These additional security measure requirements for larger passenger vessels and the terminals that serve them are justified to offset their elevated risk from a transportation security incident.

Gross Tonnage Threshold Determination

The N-RAT was also limited in its sensitivity to identify the vessel gross tonnage that sufficiently pointed to a determination of the terms “economic disruption in a particular area, transportation system disruption, or environmental damage” which are required elements of the transportation security incident definition.

Small, dry-cargo vessels (gross tonnage less than 500) were identified by the N-RAT results as vessels of concern. These vessels, regulated under 46 CFR subchapter I and in the gross tonnage range of 15 to 500, are not required to comply with SOLAS and thus are exempt from ISPS Code requirements. We believe this creates a significant security vulnerability that must be considered and addressed at an appropriate level. To establish the appropriate threshold, we evaluated the risk for a transportation security incident posed by smaller vessels (gross tonnage <500) to determine where a reasonable threshold should be drawn.

The N-RAT results showed a significantly greater risk for vessels of gross tonnage above 100 being involved in a transportation security incident than for smaller vessels. Based on the N-RAT assessment, the smaller vessels (gross tonnage <100) are unlikely to be involved in a transportation security incident because of the limited consequences they are expected to produce due to their limited size and speed. A review of the domestic freight vessels that are documented with gross tonnage under 100 reveals that less than 2 percent of these vessels are capable of causing significant consequences to facilities or other vessels, and that some of these vessels are already regulated under this rule due to the nature of the

cargo carried. However, because of their greater dimensions and the trades in which they operate, vessels with gross tonnage above the 100 threshold do present the potential of being involved in a transportation security incident. A limited analysis of potential collision effects leads us to the conclusion that these vessels may not be able to cause catastrophic personnel casualties or environmental damage. However, based on our knowledge of port operations, navigable waterways, and vessel design, construction, and operations, we believe that a significant risk of a transportation security incident (one “Catastrophic” or two or more “High” consequence ratings) exists for vessels with gross tonnage above 100. This is primarily driven by potential impact on the economy, national defense, or secondary national security threat from certain scenarios. Examples of these potential effects exist in Coast Guard accident reports where incidents documenting the blockage of channels in various rivers and ports occurred due to vessel casualties. These blockages resulted in substantial economic impacts as the mobility and commerce within the port was seriously affected.

As for the difference in the Convention Measurement tonnage and the Regulatory Measurement tonnage within this analysis, we used the Regulatory Measurement where