Office of Inspector General Audit Report

AUDIT OF THE PERFORMANCE MEASURE FOR THE RECREATIONAL BOATING SAFETY PROGRAM

United States Coast Guard

Report Number: MA-2000-084

Date Issued: April 20, 2000





Memorandum

U.S. Department of Transportation

Office of the Secretary Of Transportation

Office of Inspector General

Subject

ACTION: Report on the Performance Measure for

the Recreational Boating Safety Program,

U.S. Coast Guard

MA-2000-084

From Alexis M. Stefani

Assistant Inspector General for Auditing

Date: April 20, 2000

Reply to JA-40

To: Chief of Staff

United States Coast Guard

This report presents the results of our audit of the performance measure for the U.S. Coast Guard (Coast Guard) Recreational Boating Safety Program. An executive summary of the report follows this memorandum. Our objectives were to (1) determine the appropriateness of the Government Performance and Results Act goals and measures relating to recreational boating safety, (2) verify and validate the associated performance data, and (3) determine the status of strategies and activities for accomplishing the goals.

Our draft report was provided to Coast Guard on February 4, 2000. Coast Guard identified actions underway or planned to address all of our recommendations. However, Coast Guard did not identify specific timeframes for completing all of the actions. Please provide written comments within 30 days on the specific timeframes for completing each of the actions. The progress made by Coast Guard in implementing the actions planned is subject to the audit follow-up provisions of DOT Order 8000.1C.

We appreciate the courtesies and cooperation of Coast Guard representatives during this audit. If you have any questions concerning this report, please call me at (202) 366-1992 or Tom Howard, Deputy Assistant Inspector General for Maritime and Departmental Programs, at (202) 366-5630.

Attachment

Executive Summary

Performance Measure for the Recreational Boating Safety Program United States Coast Guard

MA-2000-084 April 20, 2000

OBJECTIVES

The audit objectives were to (1) determine the appropriateness of the Government Performance and Results Act (GPRA) goals and measures relating to recreational boating safety, (2) verify and validate the associated performance data, and (3) determine the status of strategies and activities for accomplishing the goal.

BACKGROUND

GPRA requires agencies to develop performance plans that include objective, quantifiable and measurable performance goals for accomplishing major program activities. The Coast Guard established a GPRA performance goal to reduce recreational boating fatalities and set a numerical target of 720 fatalities (or fewer) annually in fiscal year (FY) 2000.

To implement the 1971 Federal Boat Safety Act, Coast Guard established the Recreational Boating Safety (RBS) Program and in accordance with a prescribed formula, annually distributes grants to 56 States and Territories (States)¹ that maintain approved boating safety programs. In June 1998, the Transportation Equity Act for the 21st Century² increased funding for the RBS Program from \$35 million to \$64 million per year.

RESULTS IN BRIEF

Coast Guard's GPRA goal to reduce recreational boating fatalities to 720 (or fewer) annually was based on inaccurate historical data. The Coast Guard also uses this data to measure progress in reducing recreational boating fatalities. However, the data consistently understated the number of fatalities. As a result, Coast Guard's assessment of the total number of recreational boating fatalities has been understated.

¹ Includes the 50 States plus American Samoa, Guam, the Northern Mariana Islands, Puerto Rico, the Virgin Islands, and the District of Columbia.

² Also known as TEA-21 or Public Law 105-178.

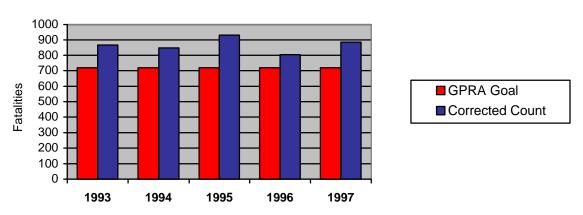
The States are responsible for investigating and reporting recreational boating fatality data to Coast Guard. Differences occur in reports from the States because a precise definition of a recreational boating fatality does not exist. Further, when Coast Guard staff responded to recreational boating incidents that involved fatalities, the fatalities were not reported to the States or to the Coast Guard's Office of Boating Safety, which maintains nationwide statistics.

FY 2000 GPRA Goal Was Based on Inaccurate Data

Coast Guard's FY 2000 GPRA goal to reduce recreational boating fatalities to 720 fatalities (or fewer) was calculated with inaccurate baseline data. Had Coast Guard used accurate FY 1993 baseline data of 867 fatalities in its calculation, the planned reduction of 10 percent would have resulted in the Coast Guard setting a more readily achievable GPRA goal of 780 fatalities (or fewer) for FY 2000.

Corrected data³ for the period FY 1993 through FY 1997 showed that recreational boating fatalities averaged about 868 per year. During this period, fatalities ranged from a low of 803 in FY 1996 to a high of 932 in FY 1995, as shown in the graph below. Since annual recreational boating fatalities have not been below 800 fatalities in the past 5 years, RBS Program officials have expressed concerns that a GPRA performance goal of 720 fatalities will be difficult to achieve.





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^{3 &}quot;Corrected data" included fatalities identified in Coast Guard's search and rescue database but not found in the Office of Boating Safety database.

Data Collection Efforts Need Improvement

The data Coast Guard uses to set the GPRA performance goal and measure its progress consistently understated the number of fatalities, and Coast Guard has not prescribed a definition of a recreational boating fatality to ensure consistent reporting.

Database Used to Measure Progress Is Not Accurate. The data in the Boating Accident Report Database (BARD), which the Office of Boating Safety uses to collect statistical data from the States on recreational boating accidents, have been consistently understated. BARD data were understated because recreational boating fatalities identified in the Coast Guard search and rescue management information system (SARMIS) were not reported to the Office of Boating Safety. The following chart shows the estimated BARD understatements.

	BARD	SARMIS Fatalities	Corrected
Year	Fatalities	Not In BARD	Count
1993	800	67	867
1994	784	66	850
1995	829	103	932
1996	709	94	803
1997	821	65	886
1998	815	N/A	N/A

Because the Coast Guard uses BARD data to set its GPRA performance goal and to determine whether the goal has been met, it is imperative that all recreational boating fatalities be recorded in BARD.

No Definition of a Recreational Boating Fatality. The Coast Guard has not prescribed a precise definition of what constitutes a recreational boating fatality for use by the States. Consequently, differences exist among the States as to what is reported. This occurs because it is sometimes unclear whether a fatality is linked to recreational boating or some other activity in or around water. Although the impact on the data submitted by the States is not readily quantifiable, the following example illustrates how differing definitions can impact the accuracy of the data.

• A recreational boater's hat fell into the water, and the boater drowned trying to retrieve the hat. The State did not consider the drowning a recreational boating fatality and did not report it to Coast Guard. However, we were told that if an oar

had fallen into the water and the boater drowned trying to retrieve the oar, then the State would have reported the incident as a recreational boating fatality.

A precise definition of "recreational boating fatality" should resolve this apparent inconsistency.

Program Effectiveness Can Be Enhanced

We identified two areas where the effectiveness of the RBS Program can be enhanced. Coast Guard has not established criteria for monitoring the effectiveness of the States' RBS Program efforts, and Coast Guard's formula for distributing RBS Program funds does not consider the States' RBS Program effectiveness in reducing fatalities.

No Criteria for Monitoring State Programs. Coast Guard has not established criteria for monitoring the effectiveness of the States' RBS Programs. Specifically, there are no review procedures outlining what aspects of the RBS Programs should be assessed, how often the programs should be reviewed, and what assistance Coast Guard can offer States when ineffective or unsuccessful programs are recognized. For example, Coast Guard has never reviewed the boating safety programs in seven States, including Florida, which had the highest number (73) of recreational boating fatalities in FY 1998. In addition, Coast Guard did not target States with high numbers of fatalities for more frequent reviews. For example, California, which had the second highest number (56) of recreational boating fatalities in FY 1998, has not been reviewed since 1991.

Funding Formula Does Not Consider RBS Program Effectiveness. The formula (mandated by public law⁴) for determining the States' allotted share of the appropriated RBS Program funds does not consider the States' RBS Program effectiveness in reducing fatalities. However, including the States' effectiveness in reducing annual fatalities as a variable could serve as an incentive for the States to be more aggressive in reducing recreational boating fatalities.

RECOMMENDATIONS

We recommend the Chief of Staff direct the Office of Boating Safety to:

- 1. Establish procedures to improve the accuracy of BARD that include
 - Implementing alternative methods of transferring data from the SARMIS to BARD, and

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⁴ Title 46 Shipping, United States Code Part I, Chapter 131 Recreational Boating Safety.

- Consultation with the appropriate national boating safety organizations to develop a precise definition of a recreational boating fatality for use by the States.
- 2. Institute a plan for monitoring the effectiveness of State's boating safety programs in reducing fatalities that includes prescribed review criteria and frequency schedules.

We also recommend that the Coast Guard consider requesting legislation to include a variable in the formula used to allocate RBS Program funds to the States that considers States' effectiveness in reducing fatalities.

MANAGEMENT RESPONSE

A draft of this report was provided to the Coast Guard Chief of Staff on February 4, 2000. In an April 18, 2000 response, the Chief of Staff agreed that a problem exists with undercounting and that improvements are needed in the reporting of recreational boating fatalities. Coast Guard is exploring ways to improve the accuracy of BARD and prefers to do that rather than transferring data from SARMIS to BARD. Coast Guard said it will consult with the National Boating Safety Advisory Council at its April 2000 meeting on developing a precise definition for a recreational boating fatality. Coast Guard agreed to have a plan in place by October 2000 for prioritizing and scheduling State visits. Coast Guard will consult with the National Association of State Boating Law Administrators to develop mutually acceptable proposals for incentive funding.

OFFICE OF INSPECTOR GENERAL COMMENTS

The actions underway or planned by Coast Guard are responsive to the recommendations in this report. However, Coast Guard did not identify specific timeframes for improving the accuracy of BARD data or developing a proposal for incentive funding.

ACTION REQUIRED

Please provide written comments within 30 days on the specific timeframes for completing each of the actions underway or planned.

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INTRODUCTION

Background

In 1993, the Government Performance and Results Act (GPRA) was established to require agencies to develop performance plans that include objective, quantifiable, and measurable performance goals for accomplishing major program activities. Each agency is to assess its efforts and issue a GPRA report on the agency's accomplishments by March 2000. As part of its efforts to comply with GPRA, the Coast Guard established a GPRA performance goal to reduce recreational boating fatalities to 720 fatalities (or fewer) annually. Coast Guard first introduced the GPRA goal in Fiscal Year (FY) 1998.

In 1998, 78 million people took to the water in 20 million recreational boats, and approximately 870 people die annually from recreational boating accidents. The largest factor in recreational boating fatalities is that 80 percent of the people engaged in recreational boating do not wear life jackets (also known as personal flotation devices). Consequently, the number one cause of fatalities is drowning--which could be vastly reduced by the increased use of life jackets.

To implement the 1971 Federal Boat Safety Act (the Act), the Coast Guard established the Recreational Boating Safety (RBS) Program, whose mission, in part, was to minimize the loss of life associated with the use of recreational boats. The RBS Program also encouraged State participation and permitted States to assume the larger share of the recreational boating safety education, assistance, and enforcement activities. Under the RBS Program, the Coast Guard Office of Boating Safety distributes grants to 56 States and Territories (States)¹ that maintain approved boating safety programs. RBS Program funds are distributed annually to the States based on a formula prescribed in the Act (Exhibit A). In June 1998, the Transportation Equity Act for the 21st Century² increased funding for the RBS Program to \$64 million per year, of which approximately \$55 million is distributed to the States. The remaining \$9 million is for non-profit grants and administrative support. Prior funding to States was approximately \$35 million per year.

Objectives, Scope and Methodology

The audit objectives were to (1) determine the appropriateness of the GPRA goal and measures relating to recreational boating safety, (2) verify and validate the associated performance data, and (3) determine the status of strategies and activities for accomplishing the goals.

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¹ Includes the 50 States plus American Samoa, Guam, the Northern Mariana Islands, Puerto Rico, the Virgin Islands, and the District of Columbia.

² Also known as TEA-21 or Public Law 105-178.

We conducted the audit between April and December 1999 at the following Coast Guard Headquarters Offices in Washington, D.C.: Boating Safety; Search and Rescue; Auxiliary; and Plans, Policy, and Evaluation. We visited 3 States, conducted telephone surveys with 12 additional States, and contacted several private organizations that have an interest in recreational boating safety (Exhibit B).

To assess the appropriateness of the GPRA goal and measures the Coast Guard established for the RBS Program, we determined whether the goal was attainable, realistic, and achievable in a timely manner; and whether the goal met the intent of GPRA. We interviewed Coast Guard officials to determine the decision process used to determine the performance goal and what measures would be used to ascertain how well the Coast Guard was doing. We analyzed the goal to determine whether it was mission related, specific, realistic, and achievable. We analyzed the performance measure to determine whether the measure is attainable, reasonable, and achievable. We also met with Department of Transportation (DOT) agencies that are familiar with setting program goals and have experience in collecting statistical data, such as the National Highway Traffic Safety Administration, the Federal Highway Administration, and the Bureau of Transportation Statistics.

To verify and validate the associated performance data (including data collection systems and internal controls), we met with Coast Guard officials to discuss how boating fatality data are collected from the States and what internal controls are in place to protect data integrity. We also discussed the processes in place to monitor and oversee the data being collected. We met with State officials to discuss data entry and data submissions to Coast Guard. To evaluate whether the data were relevant, reliable, valid, accurate and complete, we reviewed two data reconciliation studies designed to ascertain whether all recreational boating fatalities were captured. In addition, we interviewed officials from the Science Applications International Corporation, which Coast Guard has contracted with to revise the Boating Accident Report Database (BARD). We also interviewed officials at the BOAT/U.S. Foundation for Boating Safety, which Coast Guard engaged to conduct the data reconciliation studies.

To identify the strategies and activities designed to assist in accomplishing the GPRA goal, we reviewed DOT and Coast Guard Performance Plans for FYs 1999 and 2000, and the Coast Guard's Budget Estimates for FYs 1998, 1999, and 2000. Although we focused on the strategies for providing funds to States and overseeing their RBS Programs, Coast Guard has other strategies aimed at reducing recreational boating fatalities that include developing and enforcing compliance with safety standards for recreational boats and equipment; promoting the wearing of personal flotation devices; and improving boater behavior, skills, and knowledge; intensifying enforcement of drunk boating statutes; and conducting courtesy examinations and boating education courses to promote safe boat operation and use of safety equipment.

The audit was conducted in accordance with <u>Government Auditing Standards</u> prescribed by the Comptroller General of the United States.

Prior Audit Coverage

There have been no previous GPRA audits of the RBS Program. However, the Office of Inspector General (OIG) has issued two prior reports on the RBS Program.

On January 13, 1992, the OIG issued a report on the "Coast Guard Recreational Boating Safety Program" (Report Number R3-CG-2-005). The report addressed the need for RBS Program improvements in the financial management procedures at the State level, and in the use of administrative funds at Coast Guard. The report further addressed the need for Coast Guard to improve the RBS Program guidance manual. The OIG recommended the Coast Guard revise the National Recreational Boating Safety Financial Assistance Guide to clarify financial management procedures for the States and the use of administrative funds at Coast Guard. Coast Guard fully concurred with the recommendations.

On July 30, 1993, the OIG issued a report on the "Audit of Enforcement of Recreational Boat Manufacturing Standards" (Report Number R6-CG-3084). The report stated that the Coast Guard (1) did not always ensure first purchasers (boat owners) were notified of known safety defects, (2) did not adequately monitor recall campaigns, and (3) authorized payments without ensuring the independent contractor doing compliance tests of recreational boats met all contract provisions. The OIG made recommendations designed to ensure Coast Guard notifies boat owners of defective boats, maintains a correct and complete database on recall campaigns, and requires the contractor to comply with contract requirements. Coast Guard generally agreed with the recommendations; however, actions taken and planned for all recommendations were reasonable.

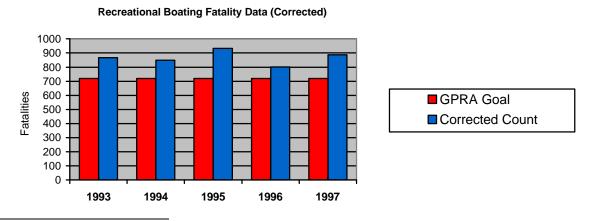
FINDINGS AND RECOMMENDATIONS

FY 2000 GPRA Goal Was Based on Inaccurate Data

Coast Guard's goal to reduce recreational boating fatalities is a good measure of maritime safety; however, the GPRA performance goal to reduce fatalities to 720 (or fewer) annually in FY 2000 will be difficult to achieve. This is because the goal was based on data which understated the number of fatalities.

Coast Guard's FY 2000 GPRA performance goal to reduce recreational boating fatalities to 720 fatalities (or fewer) was calculated with incomplete baseline data. The 720-fatality figure was calculated as a 10 percent reduction from the FY 1993 baseline of 800 fatalities. However, the FY 1993 baseline was understated by 67 fatalities. Had Coast Guard used complete FY 1993 baseline statistics (867 fatalities) in its calculation, the planned reduction would have resulted in the Coast Guard setting a more realistic GPRA goal of 780 fatalities (or fewer) for FY 2000.

Based on available data, the Coast Guard will have difficulty achieving its performance goal of reducing recreational boating fatalities to 720 (or fewer) in FY 2000. For example, corrected data³ for FY 1993 through FY 1997 shows that the average number of recreational boating fatalities during this period was about 868 fatalities per year. The number of recreational boating fatalities has fluctuated from a low of 803 fatalities in FY 1996 to a high of 932 fatalities in FY 1995. If Coast Guard is successful in accomplishing a 10 percent reduction in fatalities by the end of FY 2000 (compared to the 5-year average), the actual number of recreational boating fatalities would be 781. As shown in the graph below, the number of recreational boating fatalities has fluctuated without an apparent trend.



³ "Corrected data" included fatalities identified in Coast Guard's search and rescue database but not found in the Office of Boating Safety database.

Since annual recreational boating fatalities have not been below 800 fatalities in the past 5 years, RBS Program officials have expressed reservations that the GPRA goal may be somewhat optimistic or unrealistic. RBS Program officials also indicated that a more appropriate challenge and obtainable goal would be in the range of 780 to 800 fatalities annually.

Data Collection Efforts Need Improvement

The data Coast Guard uses to set the GPRA performance goal and measure its progress consistently understated the number of fatalities, and Coast Guard has not prescribed a definition of a recreational boating fatality to ensure consistent reporting.

Database Used to Measure Progress Is Not Accurate. BARD, used by Coast Guard's Office of Boating Safety to collect statistical data from the States on recreational boating accidents, has consistently understated fatalities. BARD was understated because recreational boating fatalities recorded in the Coast Guard search and rescue management information system were not reported to the Office of Boating Safety. We were informed that Coast Guard's search and rescue personnel were unaware of BARD and the need to transfer statistical data on recreational boating fatalities for inclusion in BARD.

In FY 1995, Coast Guard awarded a grant for a reconciliation study of the 1993 and 1994 data in BARD. The purpose of the study was to determine if recreational boating accidents to which search and rescue personnel responded were captured in BARD. The reconciliation was designed to study the comparability of data between BARD and SARMIS, the data management system for search and rescue activities. In the study report issued February 7, 1997, the contractor concluded that BARD understated recreational boating fatalities for 1993 and 1994 by 67 and 66 fatalities, respectively.

In FY 1997, the Coast Guard awarded another grant to do a data reconciliation study for 1995 through 1997. In the study report issued July 26, 1999, the contractor again concluded that BARD understated recreational boating fatalities by 103, 94, and 65 fatalities in 1995, 1996 and 1997, respectively. For the 5-year period covered by the 2 studies, BARD underreported recreational boating fatalities an average of 79 fatalities annually. The primary reason for the understatement was that when Coast Guard search and rescue personnel responded to recreational boating incidents, they reported the fatalities to SARMIS but not to the Office of Boating Safety for inclusion in BARD. Currently, no data linkage exists between BARD and SARMIS. The following chart shows the understatements in BARD.

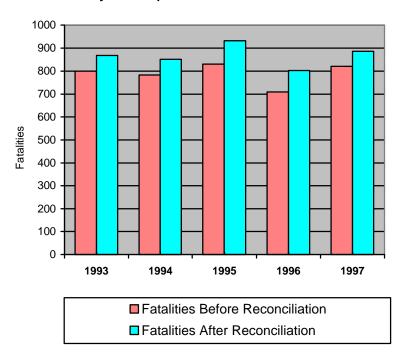
	BARD	SARMIS Fatalities	Corrected
Year	Fatalities	Not In BARD	Count
1993	800	67	867
1994	784	66	850
1995	829	103	932
1996	709	94	803
1997	821	65	886
1998	815	N/A	N/A

Accuracy of BARD data is important for several reasons. The Coast Guard annually releases a statistical report based on BARD data. Policy makers at local, State, and National levels use BARD data to develop education and enforcement programs. In addition, the Office of Boating Safety sets the RBS Program's GPRA goal and develops the budget based on BARD data. BARD focuses on collecting characteristic information about each recreational boating accident, and the data are disseminated so that new ways of preventing boating accidents can be developed. Without accurate data in BARD, the boating public and the policy makers could be misinformed.

Even though the February 1997 report of the data reconciliation study showed that the data in BARD were inaccurate, Coast Guard indicated in its FY 1998 and FY 1999 Budget Estimates a confidence level of "moderate" and "high," respectively, for the data maintained in BARD. In the Budget Estimate for FY 2000, Coast Guard made no reference to its confidence level, noting only that ". . . fatalities have not yet been consistently reduced below our target of 720."

The graph below illustrates recreational boating fatality data collected over the 5-year period 1993 through 1997. As of December 1999, the RBS Program officials stated that 815 recreational boating fatalities would be reported for FY 1998. However, for the past 5 years the number of fatalities reported has increased an average of 79 fatalities after the data reconciliation process. So the actual number of fatalities for FY 1998 may be as high as 894. RBS Program officials are not planning to reconcile the FY 1998 fatality data with SARMIS.

Fatality Data Reported Between FY 1993 and FY 1997



No Definition of a Recreational Boating Fatality. The Coast Guard has not prescribed a precise definition of what constitutes a recreational boating fatality for use by the States. The States are responsible for investigating and reporting recreational boating fatality data to Coast Guard. However, in conducting investigations it is sometimes unclear whether a fatality is linked to recreational boating or some other activity in or around water. Consequently, differences exist among State officials as to what is reported.

The lack of a definition describing a recreational boating fatality also requires RBS Program officials to review each fatality case submitted by the States to ensure the fatality reported is indeed a valid recreational boating fatality. Of 15 States we surveyed, 14 States make their own interpretations regarding the reporting of recreational boating fatalities and 1 State relies on the Coast Guard to interpret the recreational boating fatalities. In addition, only 5 of the 14 States rely on Coast Guard when questionable cases are encountered.

Although the impact of the decisions on the data submitted to Coast Guard is not readily quantifiable, we were presented with the following examples.

• In Texas a recreational boater's hat fell into the water, and the boater drowned trying to retrieve the hat. The State did not consider the drowning a recreational boating fatality and did not report the drowning to Coast Guard. However, we were told that

if an oar had fallen into the water and the boater drowned trying to retrieve it, the State would have reported the incident as a recreational boating fatality.

• In Maryland a body was found in the water next to a boat. The State was not going to report the incident as a recreational boating fatality because it was undetermined whether the victim died in the boat and fell into the water or died in the water. Although the State reported the incident to Coast Guard, the State did not consider it a recreational boating fatality until Coast Guard designated the incident as such.

The July 26, 1999 reconciliation study addressed Coast Guard's lack of a definition of a recreational boating fatality as an "obstacle" that generated some uncertainties as to how some cases should be reported. For example, victims of medical emergencies transported from recreational boats. In some cases the medical emergency was brought on by contact with the boat (i.e., having a fatal heart attack while bailing water from a sinking boat) while in others, the fatality came about naturally, such as a stroke that subsequently resulted in death.

Program Effectiveness Can Be Enhanced

Coast Guard has not established criteria for monitoring the effectiveness of the States' RBS Program efforts, and Coast Guard's formula for distributing RBS Program funds does not consider the States' RBS Program effectiveness in reducing fatalities. Therefore, Coast Guard had no basis for focusing the review on RBS Program activities that were successful in reducing recreational boating fatalities and helping each State accomplish the GPRA goal. Also, the Coast Guard could not provide financial incentives to the States that have reduced recreational boating fatalities.

No Criteria for Assessing States Progress in Reducing Fatalities. Coast Guard has not established criteria for monitoring the effectiveness of the States' RBS Programs that address progress in reducing recreational boating fatalities (or achieving the GPRA goal). Although the Office of Boating Safety uses a checklist of items to review when visiting a State to assess its RBS Program, the checklist does not include review items that focus on the effectiveness of State's efforts in contributing to the goal of reducing recreational boating fatalities. In addition, Coast Guard has no guidance indicating how often State RBS Programs should be monitored and what assistance Coast Guard can offer States when ineffective or unsuccessful boating safety programs are recognized.

According to RBS Program guidance, Coast Guard is to provide continuous analysis and evaluation of the Programs' effectiveness and determine that the most effective methods of participation, education, and information are used to contribute to the successful accomplishment of the RBS Program mission. In addition, Coast Guard is to provide guidance and standards by which State boating safety programs can develop their efforts

and against which their efforts can be evaluated.

Staff in the Office of Boating Safety developed an unofficial checklist for use when making assessments of the States' RBS Programs. However, the checklist is limited to elements of the RBS Program that pertain mostly to financial and data collection issues; it does not include aspects of the RBS Program that address effectiveness in reducing recreational boating fatalities. For example, the checklist has 10 sections and each section has specific questions to be asked during the assessment, but none of the questions refer to progress in reducing recreational boating fatalities.

Our review of five recent reports on the assessment of State RBS Programs found that the assessments closely mirrored the checklist and focused on financial and data collection matters. Nothing in the five reports addressed the number of recreational boating fatalities in each State, what the States were doing to reduce the number of fatalities, or whether the States were making progress in reducing the number of fatalities. Documented procedures prescribed by Coast Guard that include questions on efforts and progress in reducing recreational boating fatalities would focus the reviewer on specific aspects of the RBS Program related to the GPRA goal. Established review procedures would also ensure that the analysts uniformly review the same aspects of each State's boating safety program.

Identifying Best Practices Would Be Helpful. Established review procedures can identify those boating safety program activities with proven success records so RBS Program resources can be used in the most effective manner. Information on successful boating safety programs can then be shared as best practices with States having problems reducing their recreational boating fatalities. For example, the Coast Guard is keenly aware that 80 percent of recreational boating fatalities occur because victims are not wearing their life jackets. If the Coast Guard is aware of a State RBS Program that has been successful in convincing the boating public of the importance of wearing life jackets (i.e., personal flotation devices) while boating, then Coast Guard can disseminate this information for use by other States.

No Criteria for Scheduling State Visits. When scheduling State assessment visits, the Office of Boating Safety does not target which States have not been visited, nor does it prioritize States for frequency of visits based on such factors as high or increasing fatalities and amount of funding received. Although there are four analysts in the Office of Boating Safety responsible for conducting assessments of the States' RBS Programs, between FY 1993 and FY 1997 Coast Guard only assessed an average of seven States per year and no State had been assessed twice during that period.

We also noted that the RBS Programs in 7 States, totaling 321 fatalities or 19 percent of the total number of recreational boating fatalities for 1997 and 1998, have never been assessed. For example, Florida, which had the highest number of recreational boating fatalities in FYs 1997 (67 fatalities) and 1998 (73 fatalities), has never been assessed by

Coast Guard. In addition, Coast Guard did not target States with high numbers of fatalities for more frequent reviews. California, which had the second highest number of recreational boating fatalities in FYs 1997 (42 fatalities) and 1998 (56 fatalities), has not been assessed by Coast Guard since 1991. The Coast Guard should establish visitation criteria to ensure that every State's Program is assessed on a rotational basis and that States with ineffective RBS Programs (constant or rising fatalities) receive closer monitoring.

Funding Formula Does Not Consider RBS Program Effectiveness. Coast Guard's formula for distributing RBS program funds does not consider the effectiveness of the States' RBS Programs in reducing fatalities. The formula, which was mandated in 1971 by public law⁴, has never been revised. The formula has three parts and provides that one-third of the \$55 million (for FY 2000) be divided equally among all States, one-third be divided proportionately based on the number of boats registered in each State, and one-third be divided proportionately based on each State's prior year boating safety expenditures. Nothing in the formula considers each State's effectiveness in reducing recreational boating fatalities. If the formula included a fourth part that related to the States' effectiveness in reducing recreational boating fatalities, the States may become more creative with the boating safety programs and more vigorous in attempting to reach the GPRA goal. The FY 2000 RBS Program allocation ranged from \$3.7 million for Florida to \$0.3 million for American Samoa (Exhibit C).

RECOMMENDATIONS

We recommend the Chief of Staff direct the Office of Boating Safety to:

- 1. Establish procedures to improve the accuracy of BARD that include
 - Implementing alternative methods of transferring data from the SARMIS to BARD, and
 - Consultation with the appropriate national boating safety organizations to develop a precise definition of a recreational boating fatality for use by the States.
- 2. Institute a plan for monitoring the effectiveness of State's boating safety programs in reducing fatalities that includes prescribed review criteria and frequency schedules.

We also recommend that the Coast Guard consider requesting legislation to include a variable in the formula used to allocate RBS Program funds to the States that considers States' effectiveness in reducing fatalities.

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⁴ Title 46 Shipping, United States Code Part I, Chapter 131 Recreational Boating Safety.

MANAGEMENT RESPONSE

A draft of this report was provided to the Coast Guard Chief of Staff on February 4, 2000. In an April 18, 2000 response, the Chief of Staff recognized that a problem exists with undercounting and agreed that improvements are needed in the reporting of recreational boating fatalities. The Chief of Staff stated that Coast Guard did not agree with our conclusion that data from SARMIS can be used to complete BARD.

For Recommendation 1, Coast Guard concurred that procedures can be established to improve the accuracy of BARD and will work with the State Boating Law Administrators to develop solutions to improve reporting. Although Coast Guard did not concur with our recommendation to identify an alternative for transferring data from SARMIS to BARD, Coast Guard identified two actions underway to improve the accuracy of BARD. Coast Guard is drafting policies and procedures whereby station personnel will notify via e-mail messages, State Boating Law Administrators when a Search and Rescue mission involves a recreational boat. Coast Guard is also exploring the use of Online Analytical Processing to periodically monitor the effectiveness of the e-mail message notification system. Coast Guard will consult with the National Boating Safety Advisory Council at its April 2000 meeting concerning the potential for redefining the definition of a recreational boating fatality.

For Recommendation 2, Coast Guard concurred and will have a plan for prioritizing and scheduling State visits in place by October 2000 and will also develop Measures of Effectiveness for State Recreational Boating Safety Programs.

For the third Recommendation, Coast Guard did not concur with our recommendation to use States' progress in reducing fatalities in the formula for allocating funds. However, Coast Guard agreed to consult with the National Association of State Boating Law Administrators to develop mutually acceptable proposals for incentive funding.

The complete text of Coast Guard's comments is included as an Appendix to this report.

OFFICE OF INSPECTOR GENERAL COMMENTS

Our report stated that Coast Guard has used SARMIS data to develop corrected BARD data for FY 1993 to FY 1997. They have done this through the use of a contractor. Because Coast Guard has not yet contracted for the reconciliation for FY 1998 and FY 1999, corrected data is not available. We recommended that Coast Guard develop an alternative way of doing this to ensure that accurate fatality data is available in a timely manner.

The actions underway or planned by Coast Guard are responsive to the recommendations in this report. However, Coast Guard did not identify specific timeframes for improving BARD data or developing a proposal for incentive funding. The progress made by Coast

Guard in implementing the actions planned is subject to the audit follow-up provisions of DOT Order 8000.1C.

ACTION REQUIRED

Please provide written comments within 30 days on the specific timeframes for completing each of the actions underway or planned.

Exhibit A. Recreational Boating Safety Program Allocation Formula

The amount of financial assistance allocated and distributed to the States annually for their RBS Programs is based on the following three-part formula:

- One-third of available funding is allocated equally among the participating States.
- One-third is allocated among the participating States in the same ratio as the number of registered boats in each State compared to the number of registered boats in all participating States.
- One-third is allocated so that the amount to each participating State will be in the same ratio as the amount each State expended for the RBS Program during the prior fiscal year to the total amounts expended by all States during the prior fiscal year.

The following illustrates how RBS Program funds available for allocation are distributed. Of the \$64 million appropriated for the FY 2000 RBS Program, \$9,130,000 was allocated for nonprofit grants and funds administrative support; and \$54,870,000⁵ was for distribution to the States.

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$54,870,000÷3 = $18,290,000 equally divided to each State.
$18,290,000 divided according to registered boat ratios.
$18,290,000 divided according to prior year expenditure ratios.
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To further the illustration, the state of Michigan was allocated a total of \$2,188,740 for FY 2000 in the following amounts:

- Part 1 \$326,607 [Michigan's share of the equal distribution (\$18,290,000÷56)].
- Part 2 \$1,443,830 [Michigan's share based on having 7.89 percent of all registered boats (\$18,290,000 x .0789)].
- Part 3 \$418,303 [Michigan's share based on having 2.29 percent of the total amount of expenditures for 1999 (\$18,290,000 x .0229)].

-

⁵ Rounded to \$55 million for simplicity in the report.

Exhibit B. States and Private Organizations Visited or Contacted

Listed below are the 15 States with RBS Programs that we visited or contacted during this audit.

States Visited

Maryland Michigan Texas

States Surveyed by Telephone or Fax

Alaska

California

District of Columbia

Florida

Illinois

Louisiana

Minnesota

Nebraska

Ohio

Pennsylvania

Puerto Rico

Wisconsin

Private Organizations Contacted

Science Applications International Corporation BOAT/U.S. Foundation for Boating Safety Boating Safety Institute of America Bass Anglers Sportsman Society

Exhibit C. Fiscal Year 2000 Allocations for State RBS Programs

States	FY 2000 Allocation	Allocation Per Equal Share	Allocation Per Number of Boats	Allocation Per Expenditures
Alabama	1,116,434	326,607	391,144	398,683
Alaska	413,038	326,607	48,584	37,847
American Samoa	326,738	326,607	131	-
Arizona	810,456	326,607	233,759	250,090
Arkansas	734,442	326,607	305,319	102,516
California	3,135,844	326,607	1,317,582	1,491,655
Colorado	504,251	326,607	147,832	29,812
Connecticut	665,216	326,607	146,615	191,994
Delaware	436,761	326,607	65,474	·
Dist. of Col.	521,576	326,607	2,473	,
Florida	3,730,543	326,607	1,186,398	2,217,538
Georgia	1,174,135	326,607	449,721	397,807
Guam	331,025	326,607	4,418	
Hawaii	817,437	326,607	22,294	468,536
Idaho	629,789	326,607	122,974	180,208
Illinois	976,055	326,607	543,722	•
Indiana	745,670	326,607	315,833	
Iowa	712,728	326,607	312,046	
Kansas	523,106	326,607	148,922	
Kentucky	815,707	326,607	244,765	
Louisiana	1,039,312	326,607	472,422	•
Maine	745,054	326,607	186,542	
Maryland	1,888,560	326,607	289,792	
Massachusetts	844,713	326,607	216,427	
Michigan	2,188,740	326,607	1,443,830	
Minnesota	1,731,347	326,607	950,040	
Mississippi	1,023,950	326,607	399,606	•
Missouri	1,438,538	326,607	471,092	
Montana	428,603	326,607	72,658	
N. Marianas	328,072	326,607	1,465	
Nebraska	449,161	326,607	106,992	•
Nevada	547,753	326,607	87,486	
New Hampshire	568,580	326,607	136,442	
New Jersey	1,571,530	326,607	291,138	
New Mexico	525,672	326,607	94,151	104,914
New York	1,415,524	326,607	761,078	
North Carolina	1,088,104	326,607	501,995	
North Dakota	432,411	326,607	69,892	•
Ohio	2,030,031	326,607	599,625	
Oklahoma	826,796	326,607	335,888	164,301
Oregon	1,141,237	326,607	292,533	522,097
Pennsylvania Puerto Rico	1,490,949	326,607	508,257	656,085
	530,292	326,607	73,035	
Rhode Island	457,298	326,607	52,126	
South Carolina	1,375,795	326,607	581,552	
South Dakota Tennessee	440,831	326,607 326,607	70,647	
Texas	1,013,687		459,534 921,562	
Utah	1,985,907 697,943	326,607	· ·	•
Vermont		326,607 326,607	112,437 56,118	
Virgin Islands	423,993 356 607		•	•
Virginia	356,607 1,027,622	326,607 326,607	5,888 347,122	
-		·		
Washington West Virginia	998,964 446,608	326,607	359,988	
West Virginia Wisconsin	1,877,098	326,607 326,607	99,222 823,725	
Wyoming	371,753	326,607	27,684	
Totals	54,870,000	18,290,000	18,290,000	18,290,000

Exhibit D. Major Contributors to This Report

THE FOLLOWING AUDITORS CONTRIBUTED TO THIS REPORT.

Name	Title
Steve Rybicki	Program Director
Theodore M. Kilby, Jr.	Project Manager
George Hardin	Auditor-In-Charge
Lynne Carliss	Auditor
Todd Kath	Auditor
Shirley Murphy	Editor
Mi Hwa Button	Staff Assistant

APPENDIX (5 pages)

Memorandum



Subject: DOTIG REPORT ON THE PERFORMANCE MEASURE FOR THE RECREATIONAL BOATING

SAFETY PROGRAM

From: Commandant, U.S. Coast Guard

Date:

1 8. APR 2000

7500

Reply to Attn. of: G-CQM

Mark Kulwicki

267-2294

Assistant Inspector General for Auditing

(a) DOTIG Draft Report MA-2000-XXX

 Enclosed is the revised U.S. Coast Guard response to the recommendations presented in the Department of Transportation Inspector General (DOTIG) report on the Performance Measure for the Recreational Boating Safety Program.

The response is for your consideration and inclusion in your final report on this matter. For additional information concerning this response, please contact Captain Michael F. Holmes at 267-1949.

Encl:

(1) U.S. Coast Guard Response to DOTIG Recommendations

STATEMENT ON DEPARTMENT OF TRANSPORTATION INSPECTOR GENERAL (DOTIG) REPORT

I. TITLE: Performance Measure for the Recreational Boating Safety Program, United States Coast Guard, MA-2000-084, March 2000

II. U.S. COAST GUARD POSITION:

The USCG agrees that improvements are needed in the reporting of recreational boating fatalities. We recognize that a problem exists with undercounting, and the USCG is using the information from your report to build better cross checks and feedback concerning the reporting of offshore fatalities to appropriate State authorities. However, the Coast Guard does not concur with several other portions of the report. The USCG primarily disagrees with the conclusions made by the Department of Transportation Inspector General (DOTIG) that data from the Search and Rescue Management Information System (SARMIS) can be used to complete missing or underreported information in the Boating Accident Report Database (BARD) system.

III. FINDINGS DISCUSSION:

USCG Data are Accurate. Combining Databases Would Not Benefit the Integrity of the Information

- Under authority of Title 46, United States Code section 6102, State Marine Casualty Reporting System, States are required to compile and submit to the USCG reports, information, and statistical data on casualties reported to the State. State Boating Law Administrators have the responsibility to enter data from boating accident reports into BARD.
- Fatality data in BARD are verified and validated by State Boating Law Administrators and
 USCG program managers. Prior to the publication of the annual *Boating Statistics* report, the
 USCG compiles State fatality data and sends a listing of each case to each State for
 confirmation. State and USCG officials review and corroborate the data, to ensure guidelines
 for classifying fatalities were followed. Any discrepancy is reconciled jointly by the State
 and USCG program managers.
- BARD and SARMIS are administered differently and have separate and distinct functions.
 BARD is administered by the States and used as a conduit for providing information to the
 USCG. BARD contains accident data provided by State Boating Law Administrators. The
 primary function of BARD is to collect as much characteristic information as possible about
 each recreational boating accident. SARMIS is an internal USCG system whose primary
 function is to collect data that are used to measure unit workload and effectiveness and
 determine allocation of

search & rescue resources---not to collect specific data on recreational boating accidents. SARMIS data are used to analyze USCG resource expenditures as well as to forecast budgets.

- SARMIS and BARD data are not interchangeable. A significant portion of SARMIS fatality data involving recreational boats does not satisfy the criteria for reportable recreational boating fatalities. For those cases where SARMIS data appear to satisfy reporting requirements, data required to populate BARD records are incomplete. Approximately 80% of the data fields required to populate BARD records would be unknown using SARMIS data and would need to be captured at the State level.
- BARD was understated because the owners/operators of recreational boats involved in fatal accidents did not report the incident to the proper State reporting authority as required by law. To better quantify the extent of possible under-reporting, the USCG initiated and funded an analysis of BARD data conducted by the Boat Owners Association of the United States (BOAT/US) Foundation for Boating Safety. The study identified fatalities involving recreational boats in SARMIS that were not in BARD. We are reviewing strategies at the unit level to make the proper State authority aware of offshore incidents involving a boating fatality so that the State can follow-up with the owner or operator.

Boating Safety Programs Must Focus on Reducing the Accident Rate

• The USCG must primarily focus on reducing the rate of recreational boating fatalities. Certainly, in terms of numbers, USCG aims to prevent all boating fatalities and has established numerous educational, inspection and enforcement activities toward that end. Nevertheless, due to regional variation, length of boating season, and other factors, it is neither realistic nor useful to comparatively focus on performance that is tied to reducing the number of fatalities. It is more realistic to focus on the fatality rate. We are in the process of defining a measure that includes the number of exposure hours. We intend to have national data this year and State by State exposure data by FY2003.

A Definition of a Recreational Boating Fatality was Established by Agreement between the USCG and NASBLA

- Title 33 CFR 173-4 requires the operator or owner of a recreational vessel to submit an accident report to the State reporting authority when a person dies or when a person disappears from the vessel under circumstances that indicate death or injury as a result of an occurrence that involves the vessel or its equipment.
- The definition of recreational boating fatalities is contained in a set of examples developed through agreement between the U.S. Coast Guard and the National Association of State Boating Law Administrators (NASBLA). These examples are published in the annual Boating Statistics under sections entitled "REPORTABLE RECREATIONAL BOATING ACCIDENTS" and "NONREPORTABLE

RECREATIONAL BOATING ACCIDENTS." The USCG uses these definitions in compiling the national statistics. Any accident reports submitted to the Coast Guard by the States that don't meet the established criteria are not included in the national statistics.

IV RECOMMENDATIONS AND RESPONSES:

1. Establish procedures to improve the accuracy of BARD.

Concur. We agree that procedures can be established to improve the accuracy of BARD. The Coast Guard will work with NASBLA to develop solutions that improve reporting through the States to more accurately report the number of fatalities. This will be an on-going process so we will provide you with updates as improvements are made.

2. Implement alternative methods of transferring data from the SARMIS to BARD

Non-concur. The linkage between SARMIS and BARD is neither the problem nor the solution. It is simply an indicator of a problem that exists with proper recreational boating incident reporting. As explained above, the two databases capture significantly different data. SARMIS data <u>are</u> insufficient in most cases to make a valid determination for entry into the BARD system.

The Coast Guard is working on drafting policies and procedures whereby USCG station personnel will notify State Boating Law Administrators via e-mail messages when a Search and Rescue missions involves a recreational vessel. Timely notification can assist State Boating Law Administrators in their investigation efforts and help to assure that these boating accidents are reported through the BARD system. Furthermore, the USCG is exploring the use of Online Analytical Processing (OLAP) on a periodic basis to monitor the effectiveness of the proposed message trafficking notification system. OLAP will assist in identifying those fatalities involving recreational boats that were captured by SARMIS but not by BARD.

3. Consult with the appropriate national boating safety organizations to develop a precise definition of a recreational boating fatality for use by the States.

Concur-in-part. The Coast Guard will consult with the National Boating Safety Advisory Council (NBSAC) at its April 2000 meeting concerning the potential for refining the definition of a recreational boating fatality. The USCG will propose that the Council review and make recommendations concerning the current reportable and nonreportable accident criteria. The Office of Boating Safety will then consult with NASBLA if we agree to proceed with refining the definition and/or changes in the consensus criteria that can be incorporated.

4. Institute a plan for monitoring the effectiveness of States' boating safety programs in reducing fatality rates that includes prescribed review criteria and frequency schedules.

Concur. A plan for prioritizing and scheduling State visits using risk-based criteria will be developed by October 2000. We intend to initiate a project to develop Measures of Effectiveness (MOEs) for State Recreational Boating Safety Programs. The developed MOEs will be incorporated when available.

5. Consider requesting legislation to include a variable in the formula used to allocate RBS Program funds to the States that considers States' effectiveness in reducing fatalities.

Non-concur. The USCG cannot use fatalities as a variable in the allocation of funding because of the wide number of variables among the States, including for example, climate, length of boating season, types of waters, types of boating, and the number of boats in a State, as well as the extent of out-of-State boater use of a State's waters.

However, as an alternative solution, we see merit in an allocation adjustment based on a State's participation in programs that have been shown to be best practices in the reduction of recreational boating fatalities, such as boating while under the influence, implied consent laws and mandatory education. We are consulting with NASBLA to develop mutually acceptable proposals for incentive funding. This will be an on-going process and the USCG will provide you with updates as necessary.