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THESIS

THE FUTURE MISSION TASKING AND RESOURCING OF THE U.S. COAST GUARD AUXILIARY

by

Mike Barner

September 2012

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**THE FUTURE MISSION TASKING AND RESOURCING
OF THE U.S. COAST GUARD AUXILIARY**

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ABSTRACT

This thesis studies the historic activity and present operational return on investment of the U.S. Coast Guard's all-volunteer citizen supported Auxiliary organization; it recommends harvesting approximately $2.7M by eliminating the Auxiliary aviation program. The existing funds could be efficiently reprogrammed to both replace that volunteer support niche through an agreement with the U.S. Air Force and to better support other more cost effective volunteer sub-programs. This effort departs from previous similar studies because it identifies long-term trends in volunteer activity and measures the return on investment in terms of organizational outcomes, not volunteer effort or opinion questionnaire. The literature review presents examples of similar affiliated or formal volunteer organizations found in the U.S. and abroad, several of which were originally modeled after the U.S. Coast Guard Auxiliary. The volunteer demographics and participation for the six major operational Auxiliary activities are then represented to identify trends. The Coast Guard's resourcing in the form of full-time employee support and direct funding are also presented. The focus of this study is how to improve the efficiency and effectiveness of the volunteer organization to the Nation; the premise is that properly tasked and managed volunteers, with a healthy organizational culture, will multiply.

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TABLE OF CONTENTS

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LIST OF FIGURES

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LIST OF TABLES

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LIST OF ACRONYMS AND ABBREVIATIONS

AFRCC   Air Force Rescue Coordination Center
AVCGA   Australian Volunteer Coast Guard

CAP   Civil Air Patrol
CASARA   Civil Air Search and Rescue Association
CCG   Canadian Coast Guard
CCGA   Canadian Coast Guard Auxiliary
CF   Canadian Forces
CWO OTO   Chief Warrant Officer—Operational Training Officer

D1NR   Coast Guard District One, Northern Region
DGzRS   German Maritime Search and Rescue Service
DIRAUX   Directors of Auxiliary
DND   Department of National Defence

FEMA   Federal Emergency Management Agency
FTE   Full-Time Employed

HSGP   Homeland Security Grant Program

ICE-SAR   Icelandic Association for Search and Rescue

JRCC   Joint Rescue Coordination Centers

KNRM   Maritime Rescue Service of the Netherlands

MOM   Maritime Observation Mission

NMMA   National Marine Manufacturer's Association
NOC   National Operations Center
NSRI   National Sea Rescue Institute

OTO   Operational Training Officers

PCGA   Philippine Coast Guard Auxiliary
PE   Public Education
PPE   Personal Protective Equipment
PPIRBS   Personal Emergency Position Indicating Radio Beacons

RBS	Recreational Boating Safety
RNLI	Royal National Lifeboat Institution
ROI	Return On Investment
RS	Norwegian Sea Rescue
SAMA	Standard Auxiliary Maintenance Allowance
SSRS	Swedish Sea Rescue Society
TBO	Time Between Overhaul
TC	Transport Canada
USPS	U.S. Power Squadrons
VE	Vessel Examination
VISAR	Virgin Islands Search and Rescue
VSC	Vessel Safety Check
YN2	Second Class Yeoman

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I.   INTRODUCTION

A.   PROBLEM STATEMENT

A total of 63.4 million American volunteers offered over 8.1 billion hours of service in 2010.[1] A significant number of volunteers provided that service directly in support of government agencies tasked with fulfilling homeland security missions. Among those agencies, the United States Coast Guard (Coast Guard) administers over 30,000 volunteers who offer services of an almost unlimited manner through their activities in the U.S. Coast Guard Auxiliary (Auxiliary). While there are program successes, the proliferation of the various volunteer services offered also poses a growing challenge. At present, there is little Coast Guard organizational direction focusing the Auxiliary program missions on those that provide the greatest service; in practice, all volunteers are welcome and they are encouraged to serve in whatever capacity or duties they prefer—with limited consideration for the actual support needs of the Coast Guard or the resourcing required to manage those volunteers. As a matter of history, the Auxiliary program manager at Coast Guard Headquarters, Washington, DC, also shared this concern o*ver fifty years ago*. On September 21, 1960, the Chief Director of the Auxiliary sent a memo to the Coast Guard's regional Directors of Auxiliary that stated, "By statute–neither as expressed or [*sic*] by intent—was it desired that the Auxiliary encompass all marine related activities."[2] While volunteers generally provide a positive Return On Investment (ROI), meaning the "value" of the service they provide is greater than the resources required to support and manage them, volunteers are not without cost. Volunteer programs can at times require disproportionate organizational resourcing to

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[1] "Volunteering in America: Information on Volunteering and Civic Engagement," *Corporation for National and Community Service*, (n.d.), http://www.volunteeringinamerica.gov/research-papers.cfm.

[2] Memorandum, Chief Director to Directors of Auxiliary, September 21, 1960, "Subject Memos/1960–61" Folder CGAR National, quoted in John A. Tilley, *The United States Coast Guard Auxiliary: A History 1939–1999* (Washington, DC: Government Printing Office), 77.

support, offer a limited ROI, and/or pose considerable risk to either the volunteer in the form of personal safety, or to the organization in the form of legal liability.[3]

There are a limited number of full-time Coast Guard employees dedicated to supporting the resource-constrained Auxiliary program. Over the past thirty years, there has been a trend of gradually decreasing staffing and expanding Auxiliary program activities. The program managers execute an increased administrative burden with a smaller staff. This has resulted in diminished programmatic oversight quality—that could result in decreased volunteer safety. Additionally, there has been no programmatic analysis in over a decade regarding what the Coast Guard actually needs of the Auxiliary, and how it should be administered.[4] The missions of the Coast Guard have consistently grown and shifted in its history, most notably in the past decade; the mission tasking of the Auxiliary must be studied to determine in what areas the Coast Guard most needs, and can most efficiently employ Auxiliarists—and focus the Auxiliary program to those missions.

Previous research identified declines in overall organizational membership and proposed methods to recruit and retain volunteers in the Auxiliary. Those studies failed to examine trends of more than several years, consider the reality of limited resources, or address the actual Coast Guard mission needs for those volunteers. Chapter IV, Data Presentation and Analysis, addresses the issue of the "alarming" membership trends presented in previous studies of the Auxiliary; in fact, the trends were actually short-term membership adjustments due to both Coast Guard policy updates and factors external to the Coast Guard. Coincidentally, the several previous Auxiliary studies described in the literature review occurred toward the end of a membership adjustment. As presented in

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[3] Linda L. Graff, "Structural Integrity: Retrofitting Volunteer Program Infrastructure: A Briefing Paper on Making the Case for Professional Management of Volunteer Programs, (n.d.), 2, http://www.lindagraff.ca/non%20html/Musing%20-%20The%20Case%20For%20Investing%20In%20Volunteer%20Program%20Management.pdf.

[4] John A. Tilley, *The United States Coast Guard Auxiliary: A History 1939–1999* (Washington, DC: Government Printing Office). Previous formal studies of the Auxiliary include the University Services Forum study of 1977, 114–117, a study ordered by the Coast Guard Appropriation Act of 1986 and performed by Development Procurement International in 1987, 140–143, and a study performed by active duty Coast Guard Officers and Auxiliarists in 1995, entitled "The Auxiliary Business Description and Direction," 155–158.

this thesis, gross membership numbers in the Auxiliary is not the problem requiring attention; members have and will continue to join the Auxiliary. A quality volunteer organization will continue to draw interest. The problem is organizational resourcing, resourcing to both train and manage the volunteers who desire to honorably provide their services.

It might be preferable to continue to permit—and appropriately support—unconstrained membership growth and volunteerism mode diversity by the members of the Auxiliary, however, that is not practical. Even though the Auxiliary program consumes an insignificant portion of Coast Guard resources (0.24% of the Coast Guard's annual budget),[5] it is unlikely the Auxiliary will receive the additional personnel and funding to support this expansion. Historically, the Auxiliary program has not competed well in the budget cycle with the myriad other Coast Guard programs; there is no reason to believe that the Auxiliary's future funding will increase. Therefore, a study must anticipate that no additional resources will be available to support any changes to the Auxiliary program. The likely outcome of a resource-neutral based analysis will be to reduce or end the performance of lower return, less critical Auxiliary activities in favor of higher-return, higher priority activities where the Coast Guard can best employ volunteers.

After 50 years of primarily supporting recreational boating safety, one of the many diverse Coast Guard missions, The Coast Guard Auxiliary Act of 1996 replaced mission-limiting language in U.S. Code to explicitly state, "The purpose of the Auxiliary is to assist the Coast Guard as authorized by the Commandant, in performing any Coast Guard function, power, duty, role, mission, or operation authorized by law."[6] That is, the Auxiliary could now perform any Coast Guard mission, <u>authorized by the Commandant</u>, other than direct law enforcement and military operations. In practice, "authorized by the Commandant" in that code reference was interpreted as blanket approval. Essentially, any mission that was not *specifically* disallowed was allowed. This officially permitted—and

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[5] The Fiscal Year 2010 funding to the Coast Guard was $6.8B, of which $17.0M supported the Auxiliary program. "Auxiliary 101 Brief–March 2011–OMB-OIRA," U.S. Coast Guard Headquarters.

[6] *Coast Guard Auxiliary Act of 1996*, 14 U.S.C. § 822 (1996), http://uscode.house.gov/download/pls/14C23.txt.

has resulted in—a proliferation of widely varied non-recreational boating safety activities, each of which requiring specialized programmatic administration and oversight resources. Especially since September 11, 2001, Coast Guard leaders have permitted and encouraged the expansion of the Auxiliary mission scope, but have not increased the programmatic resourcing.

The volunteers that comprise the Auxiliary bring a diverse set of skills and experience; some even receive national recognition for their contributions and innovation. There are opportunities for Auxiliarists to contribute greatly to existing and emerging Coast Guard mission needs. Throughout its history, the Coast Guard has gradually assumed additional, varied duties, to include the maintenance of aids to navigation (buoys and lighthouses), icebreaking, and the regulation of commercial shipping. These are in addition to the Coast Guard's most widely known maritime safety and rescue missions.[7] In the years following September 11, 2001, the Coast Guard grew and expanded various law enforcement and military oriented missions for which the Auxiliary is prohibited from participation. Additionally, the Coast Guard is increasingly relied upon to respond to, *and lead*, national efforts related to Incidents of National Significance, such as Hurricane Katrina in 2005, the Haitian earthquake and Deep Water Horizon Oil Spill of 2010, and the Midwest floods of 2011 to name a few recent events.

This thesis studies the Auxiliary's mission execution and membership trends, volunteer interest shifts within the Auxiliary, and present anticipated Coast Guard mission support resourcing needs appropriate to maintain its volunteer program. The intent of this study is to present a set of *resource-neutral* recommendations to re-focus the activities of the Auxiliary program to best meet the needs of the Coast Guard for the next 10 years—at which time a new study should be performed.

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[7] The 11 statutory missions of the Coast Guard fall into two categories: 1) Homeland Security Missions–Ports, Waterways, and Coastal Security; Drug Interdiction; Migrant Interdiction; Defense Readiness, and 2) Non-Homeland Security Missions–Maritime Safety (this mission includes the Auxiliary's primary duty, Recreational Boating Safety), Search and Rescue, Living Marine Resources, Environmental Protection, Aids to Navigation, Ice Operations, Other Law Enforcement. U.S. Coast Guard, "United States Coast Guard 2011 Posture Statement," February 2011.

B.   RESEARCH QUESTIONS

1.   Research Question

How can the U.S. Coast Guard adapt the U.S. Coast Guard Auxiliary to better align its tasking and maximize volunteer support of Coast Guard Missions, within existing programmatic resourcing?

2.   Sub Questions

- What Return on Investment do the existing Auxiliary sub-programs offer the Coast Guard?
- In what Auxiliary program mission areas could the Coast Guard best leverage volunteer interests, skills, and participation in the next several years?
- How can the existing U.S. Coast Guard resources allocated to support the Auxiliary program be adjusted to maximize its effectiveness?

C.   SIGNIFICANCE OF RESEARCH

This research is significant because the Auxiliary program's expanding mission portfolio, as well as the changing interests of the American volunteer demographic, are putting strain on the program's resourcing—resourcing which has remained largely unchanged for over a decade. The consequence is an organization that is falling behind in its effectiveness; one could argue that the Auxiliary's reputation is in decline. If these realities are not addressed soon, a result could be an Auxiliary organization that meets neither the needs of the Coast Guard nor the expectations of America's volunteers.

As the Literature Review presents, the Auxiliary is a volunteer organization that has similarities with some other volunteer organizations in its demographics, identity, and structure. The Auxiliary's tasking and relationship with the Coast Guard, a military organization, is unique; there are no "simple" organizational comparisons or best practices that can directly apply.

Of the Auxiliary's stakeholders: Volunteer Auxiliarists, Coast Guardsmen who support and serve with Auxiliarists, U.S. citizens who are often the direct recipients of an

Auxiliarists service, and even senior Coast Guard Leadership, there are very few people who are aware of the program's trends in service and resourcing. Auxiliary stakeholders have limited access to the broad organizational issues, and as will be noted later, significant portions of the Auxiliary's historical information was not captured. Coast Guard leaders in recent history maintained an unofficial motto of "Do more with less."[8] For the past 30 years, that is precisely what the Auxiliary program has done. It is time to present research that will enable Coast Guard leaders to make difficult choices regarding the Auxiliary program's tasking and resourcing. The author found no evidence that either the Coast Guard or the Auxiliary has made any attempt to use actual resourcing and performance data in any of its programmatic decisions in the past 20 years. The analysis presented in this research aims to provide Coast Guard leadership with a comprehensive assessment of the Auxiliary program—that will facilitate informed decision-making about the future of the program. While a historical review of statistics does not directly identify future needs or address the changing and often-intangible human factors of leading a complex organization, the effort can identify trends and performance aspects. The Auxiliary program has no more "efficiencies to realize" in the status quo; it is the author's opinion it is time to study and determine which sub-programs deliver the greatest return on investment, and concentrate available resources on those aspects of the program. This resource concentration must be done if the Coast Guard expects the Auxiliary to continue to perform in a meaningful fashion, especially if there is an expectation for continued expansion of the Auxiliary's organizational mission.

D. OVERVIEW OF THESIS

This thesis is comprised of six primary Chapters. Chapter I introduces and provides a framework for the research. Chapter II offers a literature review of the overarching study of volunteer motivation and employment, and presents background information regarding other volunteer organizations that support various entities within

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[8] Military Officer's Association of America, "Interview with the Coast Guard Commandant," February 21, 2012, http://www.moaa.org/Main_Menu/User_Group/Emember/Military_Topics/Interview_with_the_Coast_Guard_Commandant.html.

the homeland security enterprise, both within the United States and abroad. The literature review ends with a discussion of several previous studies regarding the U.S. Coast Guard Auxiliary.

Chapter III reviews the method, the sources of the information to be presented, and an assessment of the quality of the data represented in this policy analysis, much of it numerical figures related to Auxiliary program participation, funding, and outcomes. The details of key assumptions and research limitations are listed in Appendix A. Chapter IV, Data Presentation and Analysis, presents and then expounds on the data by identifying trends and offering comparisons of the Auxiliary's primary operational programs relative to: levels of volunteer interest and support, Coast Guard resourcing, outcomes, and resulting return on investment for each sub program. Fifteen specific findings are identified in this section and compiled again in Appendix C. Chapter V presents a discussion of findings and corresponding recommendations. Chapter VI is the conclusion with an overview, review, and final thoughts.

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II. LITERATURE REVIEW

This literature review seeks to assess the academic, government, and popular literature relating to American volunteerism and recent shifts in volunteerism principles. The review then examines the documentation relating to current volunteer programs that other U.S. and foreign government entities use to support their functions, in an attempt to identify best practices.

Volunteering takes on various forms. In general, there are two primary categories: spontaneous volunteerism and formal or organizational volunteerism. A spontaneous volunteer is a person who has _not_ been specifically recruited for a cause or assigned a task—also known as a "Good Samaritan."[9] An example is a person who witnesses an automobile accident and steps in to provide medical assistance to injured occupants. There is, in most instances, no particular expectation of reimbursement or reward, and the response is not planned or coordinated. Formal volunteerism "…is an activity which takes place through not for profit organisations [sic] or projects and is undertaken: to be of benefit to the community and the volunteer; of the volunteer's own free will and without coercion; for no financial payment; and in designated volunteer positions only."[10] A formal volunteer affiliates with and is recognized by an organization. Examples include a "candy-striper" at a hospital, a volunteer fire fighter, or a volunteer member of Rotary International. This literature review addresses formal volunteerism only.

A. WHY DO PEOPLE VOLUNTEER?

Why do people offer their time, skills and/or resources toward a cause? A volunteer for a political party or a candidate's campaign may be impassioned about a specific issue or concern. The same could hold true for volunteers who support agenda-

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[9] Lauren S. Fernandez, "Volunteer Management System Design and Analysis for Disaster Response and Recovery" (PhD diss., The George Washington University, School of Engineering and Applied Science, March 2007), XI.

[10] "Definitions and Principles of Volunteering Information Sheet," _National Volunteer Skills Centre_, Volunteering Australia, June 2005.

focused organizations: "**NRA-ILA FrontLines** [National Rifle Association Institute for Legislative Action] is comprised of NRA-ILA's most dedicated volunteers who work vigorously at the local, state, and federal levels to defend our Second Amendment rights."[11] Beyond satisfying self-interests, why do people volunteer for organizations that support the general safety and security of their neighbors or their country as a whole, such as fire fighters, police auxiliary, or U.S. Coast Guard Auxiliary?

A simple Internet search of "why volunteer?" opens a door to a world of academic studies, discussions of motivations, and links to specific organizations seeking participants. The topic is well studied, with ample, yet differing, expert opinions. Some academic researchers, such as Susan Ellis of the University of Texas at Austin, simply attempt to list possible motivations.[12] Others study chemical reactions in the brain, or the biological reward for altruistic behavior. One study, conducted by Bartley Hoebel of Princeton University, analyzed "…the role of endogenous opiates in altruism…"[13] These studies address specific, yet diverse, individual motives; they have identified that while a desire to help others is usually primary, the direct or indirect personal return on that investment is what causes volunteers to continue serving.

Non-technical discussions of volunteer motivation are also readily found. Most sources present "pride in service" as the primary driver; people simply have a sense of pride in their contributions to an organization or cause, and continue to offer them as long as they continue to achieve that sentiment. This common theme is also included in popular culture web sites, where organizations such as GenNext seek to recruit volunteers through the promise of "feeling good about oneself" for participation.[14] Another driving

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[11] National Rifle Association, *Institute for Legislative Action*, (n.d.), http://secure.nraila.org/volunteer.aspx.

[12] Susan J. Ellis, "Why Volunteer," *ServiceLeader.org*, (n.d.), http://www.serviceleader.org/volunteers/why.

[13] Bartley G. Hoebel, "The Neural and Chemical Basis of Reward: New Discoveries and Theories in Brain Control of Feeding, Mating, Aggression, Self-Stimulation and Self –Injection," in *Law, Biology and Culture, The Evolution of Law*, ed. Gruter and Bohannan (Santa Barbara: Ross-Erikson, Inc., 1983), 111.

[14] "First Time Volunteers: GenNext & PRIDE gives HNHF Service Event," YouTube video, posted by Christopher Ludlow, September 2, 2011, http://www.youtube.com/watch?v=05BRh0FS3AU.

motive for volunteers is after-the-fact recognition for the service. There are numerous volunteer recognition websites and forums that exchange suggestions for various types of formal and informal, public and private, recognition.[15]

Organizations that administer volunteers must identify volunteer motives, and find ways to enhance that experience, personal return, or accomplishment in orders to promote continued support. Ironically, there is an entire for-profit industry of experts that specializes in volunteer motivation. These commercial firms can provide assistance to non-profit organizations to assist them in maximizing their effectiveness. For example, the American Red Cross, a non-profit organization, offers gifts for blood donors upon each event of blood donation. Additionally, a blood donor earns "points" that can be used online. "Exchange your points for prizes, including: Red Cross apparel, music downloads, and other items," reads one website.[16] It is reasonable to expect that a national and well-organized non-profit such as the American Red Cross has determined that promising "gifts" in exchange for voluntary blood donations is a fiscally sound and appropriate motivation technique—and that they sought the assistance of commercial marketing firms to identify products that will effectively encourage blood donation, at the minimum unit expense. Casual contact with one of these marketing firms, called Energize Inc., proved that they are reluctant to disclose their methods and customers, as it is proprietary.[17] Today, recognizing and reinforcing volunteer motivation is an industry.

B.   TRENDS IN VOLUNTEER ACTIVITY OVER THE PAST SEVERAL DECADES

Culture shifts over time. Different generations have distinct cultural norms that influence the activities in which people engage. Also, world events and technology greatly affect the form and frequency in which people volunteer. The various fields of American volunteerism include political, religious, and civic affiliation. There is ample

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[15] EnergizeInc., "Volunteer Recognition," April 13, 2012, http://www.energizeinc.com/ideas.html.

[16] American Red Cross, "Red Cross Rewards," (n.d.), https://www.membersforlife.org/arcpn/index2.php.

[17] Energize, Inc., "About Energize and Our Website," (n.d.), http://www.energizeinc.com/ener/ener.html.

statistical information exhibiting how these activities have seen fluctuations in activity. A noteworthy book is "Bowling Alone: The Collapse and Revival of American Community," by Robert D. Putnam.[18] Published in 2000, this book discusses a general erosion of social capital in America and provides statistics to support trends in inter-personal involvement among Americans. In very general terms, the reference cites a peak in citizen involvement in the early 1950s and several fluctuations over the following decades. Putnam co-authored a follow-up book three years later entitled, "Better Together: Restoring the American Community."[19] Unlike the original, this book focuses primarily on twelve success-stories in social connectivity and volunteer cooperation.[20] "Better Together" contributes less to the academic study and appears to offer a more optimistic viewpoint of where society is heading and how it could be improved.

Aside from some books and scholarly studies that address a particular snapshot in time, the primary and most useful source of regularly updated statistical data addressing volunteer-related activity is the U.S. federal government. A principle reference is the Corporation for National and Community Service, which "…is a federal agency that engages more than five million Americans in service..."[21] This agency offers dozens of federally supported research studies specifically related to volunteerism and service. For example, two research conclusions include "Individuals who volunteer live longer,"[22] and "A 'class gap' exists in teenage volunteering. The volunteer rate of youth from disadvantaged circumstances (DAC) is 16 percentage points lower than the rate for other youth (43% and 59%, respectively)."[23]

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[18] Robert D. Putnam, *Bowling Alone: The Collapse and Revival of American Community* (New York: Simon & Schuster, 2000).

[19] Robert D. Putnam and Lewis M. Feldstein with Don Cohen, *Better Together: Restoring the American Community* (New York: Simon & Schuster, 2003).

[20] Scott London, "Better Together: Restoring the American Community," 2003, Book Review, http://www.scottlondon.com/reviews/putnam2.html.

[21] Corporation for National and Community Service, "About Us," (n.d.), http://www.nationalservice.gov/about/overview/index.asp.

[22] Corporation for National and Community Service, "The Health Benefits of Volunteering: A Review of Recent Research," April 2007, Issue Brief, http://www.nationalservice.gov/pdf/07_0506_hbr_brief.pdf.

[23] Corporation for National and Community Service, "Leveling the Path to Participation: Volunteering and Civic Engagement Among Youth From Disadvantaged Circumstances," March 2007, Issue Brief, http://www.nationalservice.gov/pdf/07_0328_disadvantaged_youth.pdf.

The Bureau of Labor Statistics produces a monthly survey, the Current Population Survey (CPS), which is sent to 60,000 households. The Corporation for National and Community Service sponsors a volunteering supplement to that survey. The statistics captured in that report are more than simply reported; they are analyzed and demographically presented in a fashion that is of use to the study of volunteers. Examples include: women volunteer at a higher rate than did men; older volunteers [age 65 and older] are more likely to volunteer primarily for religious organizations; part-time workers are more likely than full-time workers to have participated in volunteer activities.[24]

C. VOLUNTEERISM DEMAND …..HOW VOLUNTEERS ARE EMPLOYED TODAY

While the traditional role of providing group manual labor for a good cause is often the primary mode of delivery for volunteer effort, the literature shows that the roles of volunteers are beginning to change.[25] Again, the primary source that offers a broad accounting of volunteer activity is the U.S. federal government, in particular the Corporation for National and Community Service, which maintains a regularly updated statistical accounting of volunteer activities and organizations.[26]

Other non-governmental literature seeks to assist organizations understand how to best harness volunteer talent and identify some best practices. David Eisner, et al, wrote an article describing a talent management approach to recruitment and identified The March of Dimes as a standout success story in the employment of volunteers, primarily because they measure and advertise the value of their volunteers' service.[27]

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[24] Corporation for National and Community Service, "Volunteering in the United States, 2009," January 26, 2010, Bureau of Labor Statistics, U.S. Department of Labor, News Release, http://www.nationalservice.gov/pdf/volunteer_study_09.pdf.

[25] David Eisner et al., "The New Volunteer Workforce," *Stanford Social Innovation Review*, Winter 2009, http://www.ssireview.org/articles/entry/the_new_volunteer_workforce.

[26] Corporation for National and Community Service, "Volunteering in America 2010 Fact Sheet," (n.d.), http://www.nationalservice.gov/pdf/10_0614_via_2010_fact_sheet_6_10_10.pdf.

[27] Eisner et al., "The New Volunteer Workforce."

Social media itself can be both a form of volunteerism and a research method in the study of volunteerism. The volunteer participation phenomenon of "crowd sourcing," or presenting a problem to the public to collectively solve is an example. The "Wikipedia" online encyclopedia that was assembled, edited, and now maintained by volunteer subject matter experts, offers both definitions of volunteerism as well as links to volunteer opportunities.[28] The relatively new Internet-based forms of volunteerism are beginning to be studied. In a blog posted by Ben Rigby, the concept called "micro volunteering" was differentiated from "virtual volunteering," describing appropriate uses and outcomes of each.[29] Technological advances are expanding the opportunities and tools available to support volunteerism; this could lead to increased volunteer participation, efficiency, and effectiveness in the future.

D. HOW VOLUNTEERS ARE EMPLOYED ELSEWHERE IN THE HOMELAND SECURITY ENTERPRISE

Numerous government entities responsible for homeland security, both in the United States and internationally, employ volunteers. The majority of available literature relating their missions, membership, and resourcing are readily available from the organizations themselves, frequently located in their websites. This readily accessible information is not actually literature as much as information, statistics, and facts.

1. U.S. Government-Supported Homeland Security Volunteer Organizations

a. The Citizen Corps

Numerous government entities responsible for homeland security employ volunteers. The Citizen Corps, which operates under the auspices of the Federal Emergency Management Agency (FEMA), stands out as one of the largest national volunteer organizations. The Citizen Corps has no clearly defined role in the National

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[28] Wikipedia, "Crowdsourcing," (n.d.), http://en.wikipedia.org/wiki/Crowdsourcing.

[29] Ben Rigby, "Why Microvolunteering Is Not Virtual Volunteering," *SparkedBlog*, December 24, 2010, http://blog.beextra.org/2010/12/why-microvolunteering-is-not-virtual-volunteering.html.

Preparedness System (NPS), nor does it have guiding policy that steers activity toward a particular measurable national goal. The clearest mission statement found read, "Citizen Corps is the FEMA's nationwide grassroots strategy to achieve greater community safety, preparedness, and resilience."[30] There are presently 1,092 County and local/tribal Citizen Corps councils, representing 60% of the population.[31] No statistics indicating the number of Citizen Corps volunteers could be found by the author. The Citizen Corps councils are relatively autonomous, often using information and materials presented from various government sources. Council activities reflect the interest of a particular council's membership and leadership with no specific national tasking. The Fiscal Year 2010 DHS budget was $42.7B.[32] From that budget, the Citizen Corps was funded $12.5M through the Homeland Security Grant Program (HSGP), a $1.8B program.[33] Less than 0.03%, or $1 out of every $3,416 of the DHS budget was devoted to supporting volunteer citizen activities in homeland security. FEMA does not directly report measurable advancements of homeland security due to Citizen Corps activity. While not fully measured, Citizen Corps members and affiliates throughout the country hold training sessions and share information related to community preparedness. The activities themselves, such as family emergency action plan training, appear to provide increased communication and connectivity between local government and citizens.

b.   The Civil Air Patrol

The Civil Air Patrol (CAP) is a U.S. Air Force Auxiliary with over 60,000 volunteer members. Its three primary mission areas are aerospace education, cadet programs, and emergency services.[34] The first two missions relate to the goal of

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[30] citizencorps, "2009 Citizen Corps Annual Report," 2009, http://www.citizencorps.gov/news/reports/Citizen%20Corps%202009%20Annual%20Report.pdf, 2.

[31] citizencorps, "Citizen Corps Councils Around the Country," (n.d.), http://www.citizencorps.gov/cc/CouncilMapIndex.do.

[32] Office of Management and Budget, "U.S. Department of Homeland Security," White House, The, (n.d.), http://www.whitehouse.gov/omb/fy2010_department_homeland.

[33] Federal Emergency Management Agency, "Fiscal Year (FY) 2010 Homeland Security Grant Program (HSGP) Frequently Asked Questions (FAQs)," (n.d.), http://www.fema.gov/txt/government/grant/2010/fy10_hsgp_faq.txt.

[34] Civil Air Patrol, "History of Civil Air Patrol," (n.d.), http://www.gocivilairpatrol.com/about/.

recruiting and training future Air Force pilots. The third administers volunteer licensed pilots in performing operational missions (primarily search and rescue), for which the Air Force would otherwise have to use Air Force pilots and dramatically more expensive aircraft. About half of the members are "Cadets" and the other half are "Adult Volunteers."[35] The CAP reports that it flies more than 85% of all federal inland search-and-rescue missions for the Air Force, rescuing nearly 100 people each year.[36] Budget figures from 2006 state that of a total Air Force budget of $102.9B, $31.5M was allocated to the CAP program.[37] In relative terms, 0.03%, or $1 out of every $3,332 funded to the Air Force, supports its volunteer program. The Civil Air Patrol is managed by 116 active duty and civilian Air Force members and 100 members of the Civil Air Patrol non-profit corporation.[38]

c. U.S. Power Squadrons

The U.S. Power Squadrons (USPS) is the largest non-profit recreational boater safety organization in the United States and has 35,000 members organized into 450 squadrons.[39] While having no government affiliation, the USPS has a very close working relationship with the Coast Guard Auxiliary, with approximately 6,000 people holding memberships to both organizations. The USPS missions include teaching recreational boater safety courses to the public, conducting courtesy vessel safety checks at the request of boat owners, and reporting maritime navigational and safety hazards to authorities, all of which are missions also performed by the Auxiliary.[40] Funding for USPS activities is derived strictly from membership dues and proceeds from boater safety

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[35] USAF, "Factsheets: Civil Air Patrol," January 21, 2011, http://www.af.mil/information/factsheets/factsheet.asp?id=163.

[36] Civil Air Patrol, "Emergency Services," (n.d.), http://www.gocivilairpatrol.com/about/civil_air_patrols_three_primary_missions/emergency_services.cfm.

[37] Defense Industry Daily, "A National Bargain: The US Civil Air Patrol," February 13, 2007. http://www.defenseindustrydaily.com/a-national-bargain-the-us-civil-air-patrol-02016/.

[38] USAF, "Factsheets: Civil Air Patrol."

[39] U.S. Power Squadrons, "About USPS," (n.d.), http://www.usps.org/newpublic2/about.html.

[40] Ibid.

course fees. While not managed or funded by the government, the USPS plays an important role as a national participant in homeland security.

2. International Volunteer Maritime Rescue Organizations

There are many examples of volunteer activity in supporting safety and security in other nations. Again, one can readily find information on their organizational websites. There are quite a few organizations having missions that are analogous to the U.S. Coast Guard Auxiliary.

a. *The Canadian Coast Guard Auxiliary (CCGA)*

The CCGA parallels the U.S. Coast Guard Auxiliary in its support for its parent agency, the Canadian Coast Guard. It focuses its members' efforts strictly on maritime Search and Rescue (SAR), while U.S. Coast Guard Auxiliarists perform the full gamut of activities. With 4,000 members and 1,133 vessels, CCGA reported conducting 1,741 search and rescue missions in 2010.[41] The agency reports, "Because auxiliarists [sic] are only reimbursed for out of pocket expenses when tasked to a SAR mission, the Government of Canada receives the equivalent of $30 in services from the CCGA for every dollar actually spent. In other words, CCGA members save Canadian taxpayers millions by providing services at a fraction of the cost of maintaining the same number of Coast Guard units at the ready."[42]

b. *The Philippine Coast Guard Auxiliary (PCGA)*

The PCGA is also very similar to its Canadian and American counterparts. The mission of PCGA is "Assisting the Philippine Coast Guard in promoting safety of life and property at sea, protection of the marine environment, and other humanitarian

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[41] Canadian Coast Guard Auxiliary, "Canadian Coast Guard Auxiliary Annual Review 2010," (n.d.), http://www.ccga-gcac.org/publications/Annual_Review_2010-en.pdf.

[42] Canadian Coast Guard Auxiliary, "Running Costs," (n.d.), http://www.ccga-gcac.com/about/runningcosts_e.asp.

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activities."[43] The efforts of PCGA's members are focused strictly on independent actions, in support of safety and environmental protection; the volunteers do not integrate into or serve in direct support of active Philippine Coast Guard units.

c.   The Australian Volunteer Coast Guard (AVCGA)

The AVCGA is a stand-alone all-volunteer organization (it is not an auxiliary to a full-time government organization) comprised of approximately 2,500 members, organized into 65 flotillas with 100 corporate owned patrol vessels.[44] The mission of the AVCGA is "…to enrol [sic] the owners and operators of vessels of various types, aircraft, radio bases, and other specialised [sic] equipment, these being termed "facilities" and to train and utilise [sic] them and their facilities to promote safety on the water."[45] The AVCGA mission is focused strictly on citizen safety and to execute rescues.

d.   The Royal National Lifeboat Institution (RNLI)

The RNLI is an all-volunteer organization, independent of government management, and serves to support Her Majesty's Coastguard in the United Kingdom, and the Irish Coast Guard in the Republic of Ireland. The missions of the RNLI include responding to Search and Rescue emergencies out to 100 nautical miles offshore, affecting inshore rescues, as well as providing beach lifeguard services. The RNLI is comprised of over 4,500 volunteer lifeboat crewmembers that man 330 lifeboats at 230 lifeboat stations. The organization also has over 50 volunteer lifeguards and employs another 700 seasonal lifeguards at 140 United Kingdom beaches. RNLI reports that 84% of contributions go directly to operations; the other 16% is used to further generate voluntary income (donations). "Six of 10 launches are made possible by the kind

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[43] Philippine Coast Guard Auxiliary, "About PCGA," (n.d.), http://pcgauxiliary.org/aboutpcga/history.html#.

[44] Australian Volunteer Coast Guard, "Australian Volunteer Coast Guard Member's Handbook," (n.d.), http://www.coastguard.com.au/media/documents/Memb_Hbook_07.pdf.

[45] Ibid., 5.

supporters who leave bequests, large and small, in their wills."[46] RNLI has 1,300 fundraising teams supporting its safety and rescue mission.

e. Other International Volunteer Maritime Rescue Organizations

(1)   The German Maritime Search and Rescue Service (DGzRS). It reports, "186 full-time employees and more than 800 volunteers are on call on 20 rescue cruisers and 41 lifeboats. Fifty-four stations in the North Sea and Baltic Sea, on the mainland and the islands form a dense rescue network. All missions are coordinated by the central MRCC—Maritime Rescue Co-ordination Centre—in Bremen."[47]

(2)   The Icelandic Association for Search and Rescue (ICE-SAR). It is a both maritime and land-based volunteer search and rescue organization comprised of 3,000 volunteers, 150 lifeboats, and 14 all-weather boats, organized into about 100 teams. They also build and maintain a network of wilderness emergency shelters both on remote shores and in highland areas.[48]

(3)   The Maritime Rescue Service of the Netherlands (KNRM). It is another privately funded, all-volunteer organization that includes approximately 850 volunteers who serve at 45 rescue stations.[49]

(4)   South Africa's National Sea Rescue Institute (NSRI). It includes 980 unpaid volunteers who operate 92 rescue craft at 32 coastal rescue bases.[50]

(5)   The Norwegian Sea Rescue (RS). It is also a self-funded volunteer corps comprised of 900 members who operate 16 boats.[51]

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[46] Royal National Lifeboat Institution, "Fact Sheet 2009," (n.d.), http://www.rnli.org.uk/assets/documents/RNLI%20factsheets/RNLI_factsheet09.pdf.

[47] German Maritime Search and Rescue Service, "German-English Brochure," *Die Seenotretter*, (n.d.), http://www.seenotretter.de/fileadmin/user_upload/PDF/Technikbroschuere2010.pdf.

[48] Slysavarnafélagid Landsbjörd, "ICE-SAR, A Tale of Great Achievements," (n.d.), http://www.landsbjorg.is/category.aspx?catID=250.

[49] KNRM, The Royal Netherlands Sea Rescue Institution, "Maritime Rescue Service of the Netherlands," (n.d.), http://www.knrm.nl/.

[50] National Sea Rescue Institute, "About Us," (n.d.), http://www.nsri.org.za/about/.

[51] Redningsselskapet, "Norwegian Sea Rescue," (n.d.), http://www.redningsselskapet.no/Om+oss/English.

(6)   Swedish Sea Rescue Society (SSRS). It is also known by its literal translation "Swedish Maritime Rescue Service" and performs 70% of the nation's search and rescue with 1,800 volunteers who serve at 66 stations and operate 160 lifeboats.[52]

(7)   The (British) Virgin Islands Search and Rescue (VISAR). It was modeled after RNLI and operates two rescue boats, one based on Tortola, and the other Virgin Gorda. The organization's motto is "VISAR saves lives at Sea."[53]

The reason for this rather lengthy list of foreign volunteer maritime rescue organizations is to demonstrate one worldwide commonality that sets the U.S. Coast Guard Auxiliary apart from all other *similar* organizations; all other identified volunteer maritime rescue organizations focus their membership's training and responses solely on the mission of civilian safety at sea, through monitoring recreational boating activities and executing search and rescue missions. These other organizations do not integrate with non-volunteer government entities and do not perform their volunteer service in direct support of military units.

3.   International Non-Maritime Homeland Security Volunteer Organizations

Other examples of volunteer participation in foreign non-maritime homeland security-related efforts include Germany and Israel. Homeland Security is used in the context of the U.S. definition, which includes ensuring public safety/emergency preparedness and crisis management, relating to both natural and man-made incidents. These two examples reflect the range of use of the term "Homeland Security."

a.   *Germany*

The German Federal Minister of the Interior reports that Germany's emergency response system is based on volunteer commitment and is represented by

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[52] Sjöräddnings Sällskapet, Swedish Maritime Rescue Service, "Frivilliga Sjöräddare Sedan 1907," (n.d.), http://www.sjoraddning.se/om-oss/.

[53] Virgin Islands Search and Rescue, "About VISAR," (n.d.), http://www.visar.org/about/.

more than 1.2 million volunteer fire fighters and members of five volunteer organizations. Translated into English, these organizations are called: the German Red Cross, the Worker Samaritan Fund, the German Life Saving Company, the Maltese Emergency Service, and the Hoot Accident Assistance. "…with another 500,000 volunteers, together with the 76,000 volunteers of the Federal Agency for Technical Relief. Germany's emergency preparedness and response system would be unthinkable without the commitment of so many volunteers. Their efforts make an important contribution to security."[54] In addition to acknowledging the great number of volunteers, note the word "security" used in this quote; in this context, these agencies would be identified as contributing to "safety" in the American context of the word.

b. Israel

A standout among international volunteer participation in homeland security-related efforts is Israel. The Israel Civil Guard is a homeland security-focused volunteer organization that supports the Israel Police, a national police force. There are over 70,000 members, with most fulfilling the role of "Civil Guard Volunteer," unarmed citizens "...engaged in the prevention of terror acts and crimes."[55] Other volunteer members are given specialized training in specialties such as diver, border guard, or bomb disposal; they are issued police uniforms, and some carry firearms.[56] This is an altogether stand-alone aspect of volunteer involvement in homeland security and is the only example found where unpaid volunteers are placed on the "front-lines" of anti-terrorist security. These volunteers are trained in relatively hazardous fields (bomb disposal?), and given the authority to carry out related missions, with some authorized to use deadly force if necessary.

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[54] German Federal Ministry of the Interior, "Civil Protection and Crisis Management," (n.d.), http://www.bmi.bund.de/EN/Themen/Sicherheit/BevoelkerungKrisen/bevoelkerungkrisen_node.html#doc440498bodyText1

[55] Israel Police, "The Israel Police and the Community," (n.d.), http://www.police.gov.il/english/Volunteers/Pages/default.aspx.

[56] Ibid.

The nation of Israel exists in a much different state of homeland security and exposure to terrorist threats than the United States; terrorist events are a regular occurrence in Israel, and the acceptance of armed volunteers in its support is tolerated by its citizens to a much greater extent than would be generally tolerated in the United States. While there is no federally supported equivalent to the Israel Civil Guard in the U.S., this research identified The New Mexico Mounted Patrol where volunteers are trained and deputized—and armed—to support state and local law enforcement officers. The organization's website indicates, "Troopers have been working beside local and state police agencies during snow storms, State Fairs, rodeos, plane crashes, hazardous material spills, prison riots, pursued escaped felons, the anti-war riots in Albuquerque, and every weekend assisting agencies with the daily police duties. Troopers even went to New Orleans after Katrina."[57] Based on the author's research, the state of New Mexico statute that permits uniformed volunteer law enforcement shows that there is at least one location in the U.S. where potentially armed volunteer law enforcers are permitted; others are likely—but not at the national level.[58]

As previously mentioned, the literature regarding other governmental homeland security oriented organizations is easily found and of great utility to this thesis; these organizations are often measured by their parent agencies and governments, and offer a basis of comparison for studying best-practices and efficiencies. The root motives and affiliations of those specific volunteers were not sought, as only a general overview of American volunteer activity is necessary for this research.

These are a few examples of how volunteers are used in support of homeland security in the United States and several other countries. A common theme runs across nationalities: the parent nation is better prepared for threats and emergencies, more responsive to actual events, and generally more "secure" due to the activities of the volunteers. Also noted by various organizations in their informational material, but oftentimes difficult to quantify, is that the return on investment of volunteer efforts is

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[57] The New Mexico Mounted Patrol, "Home," (n.d.), http://nmmountedpatrol.com/.

[58] State of New Mexico Statutes, Chapter 29, Article 6, describes the establishment, duties, and membership requirements for the New Mexico Mounted Patrol. Laws.com, "Article 6–New Mexico Mounted Patrol, 29-6-1 through 29-6-6," (n.d.), http://statutes.laws.com/new-mexico/chapter-29/article-6.

greater than one-to-one. Another observation is that the volunteers described in the aforementioned examples typically do not integrate with full-time paid workers, and except for Israel, perform solely humanitarian or other rescue duties. Volunteers who participate in activities in support of homeland security (their mission) deliver more value than then the raw resources required to support them.

4.   Recent Studies of U.S. Coast Guard Auxiliary

The literature review revealed three formal (U.S. Government commissioned) studies of the Auxiliary, in 1977, 1986, and 1995, and two more recent academic studies in 2006 and 2008.

a.   1977, University Services Forum Study

A study was commissioned by the Coast Guard in 1976 in which approximately 2,000 Coast Guard and Auxiliary members filled out questionnaires. The study determined that the Auxiliary was a professional and economic resource for the Coast Guard. It went on to recommend expanding the ranks of the Auxiliary to support the then growing recreational boating activity.[59]

b.   1987, Development Procurement International Study

A study was ordered by the Coast Guard Appropriation Act of 1986 and performed by Development Procurement International in 1987. This study performed a questionnaire among current and former Auxiliarists in an attempt to identify reasons as to why volunteers would choose to leave the Auxiliary. The study determined that recent enrollment declines were "natural" and "temporary," but the Coast Guard should seek to maintain Auxiliary membership growth at 3% per year in order to accommodate growth in American Recreational boating.[60]

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[59] Tilley, *The United States Coast Guard Auxiliary: A History 1939–1999*, 114–117, quoted on the U.S. Coast Guard's Auxiliary Program Management Office website: http://www.uscg.mil/auxiliary/administration/aux-history.asp.

[60] Ibid., 140–143.

### c.	1995, "The Auxiliary Business Description and Direction" Study

This study, partially performed by Coast Guard Officers and Auxiliarists, determined that the permitted duties of the Auxiliary should be expanded to permit direct support to the Coast Guard. Federal code was changed the next year to permit activities beyond those of just recreational boating safety. This study is key in the timeline of events leading up to the basis of this thesis. This is the point in time that marked the beginning of the "proliferation" of Auxiliary activities.[61]

### d.	2006, "Can the U.S. Coast Guard Survive in the 21st Century" Study

Commodore Fred Gates, a senior Coast Guard Auxiliarist, championed a study in 2006 entitled, "Can the U.S. Coast Guard Survive in the 21st Century: How changing generational attitudes will affect an all-volunteer organization."[62] That study primarily examined four major generations (Silent Generation, Baby Boomer, Gen X, Gen Y) and presented cultural generalities or norms among them. The study drew conclusions regarding volunteer interest and motivational needs similar to other studies; the volunteers of the younger generations are less interested in regularly scheduled camaraderie events and are more likely to engage in short-duration activities that also support personal and professional growth.[63]

### e.	2008, "Enhancing Recruitment and Retention of Volunteers in the U.S. Coast Guard Auxiliary"

Lieutenant Matt Dooris, a Coast Guard Officer and 2008 Naval Postgraduate School, Center for Homeland Defense and Security graduate authored "Enhancing Recruitment and Retention of Volunteers in the U.S. Coast Guard

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[61] Tilley, *The United States Coast Guard Auxiliary: A History 1939–1999*, 155–158.

[62] Fred Gates, "Can the U.S. Coast Guard Survive in the 21st Century: How Changing Generational Attitudes Will Affect an All-Volunteer Organization," August 2006.

[63] Ibid., 20.

Auxiliary."[64] Lieutenant Dooris's thesis argument was that Auxiliary membership was steadily decreasing due to Auxiliarist unhappiness and that the Coast Guard should take action to reverse the trend. He proposed administering the Coast Guard Organizational Assessment Survey to Auxiliarists to identify what may support improved retention. The overriding focus of this thesis was that the decreasing membership was a grave problem. It reflected a snapshot in time of the overall organization when Auxiliary membership numbers were declining, after an enormous uptick immediately post-9/11; members joined, but some soon left after the patriotic surge settled. At the conclusion of Mr. Dooris' thesis, he wrote, "Further study of innovative volunteer management practices and recruitment strategies must be pursued to improve and strengthen the ranks of the Coast Guard Auxiliary on a continuing basis."[65] This thesis addresses that sentiment.

One aspect that is conspicuously absent in this review is literature regarding organizational attempts to (re) focus the support provided by, or to find efficiencies in the resourcing of, volunteers by a parent organization. It appears that other organizations either fully resource and provide support to the wide array of volunteer activities—and have no resourcing concerns, or they refrain from openly sharing their experience with volunteer resourcing issues. Volunteers and volunteerism can be a sensitive topic. It is possible that few organizational leaders wish to qualify or quantify *limits* to their financial support of volunteers for fear of appearing unappreciative of volunteer efforts, or otherwise discouraging their affiliation and participation.

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[64] Matthew Dooris, "Enhancing Recruitment and Retention of Volunteers in the U.S. Coast Guard Auxiliary" (master's thesis, Naval Postgraduate School, 2008).

[65] Ibid., 149.

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III.   METHOD

A.   METHOD—POLICY ANALYSIS

The research sub-questions seek to clarify the Auxiliary's return on investment, the direction of volunteer support of the Coast Guard, and how to optimize existing programmatic resources. A policy analysis of Coast Guard Auxiliary volunteer activities and programmatic resourcing was performed (programmatic funding, and direct support by paid Coast Guard employees assigned to manage the Auxiliary full-time), based on primary data and existing Coast Guard organizational documents. The policy analysis measured a present day return on investment of primary Auxiliary sub-programs and presents the Auxiliary's current demographics and trends in volunteer activity, in order to identify general shifts in volunteerism. In today's challenging budgetary cycle, many federal agencies—including the Coast Guard—are redoubling their efforts to measure performance, identify any and all opportunities to trim expenses, and optimize outcomes. This information should assist Coast Guard planners to better understand the Auxiliary program's capability to maintain current missions and/or take on future missions.

As discussed in the literature review, formal studies of the Auxiliary missions were performed in 1977, 1986, and 1995.[66] Those studies reviewed the desired size, level of professionalism, and general mission-set of the Auxiliary, as well as volunteer satisfaction with the organization. However, those same studies did not review the program's actual cost to the Coast Guard. They also did not study the demographic and mission area participation *trends* of the Auxiliary's volunteers. Several more recent non-Coast Guard directed studies discussed in the literature review touched on short-term trends, suggested member unhappiness, and indicated a need to placate the members in order to sustain programmatic viability. During the past decade, the resourcing status quo has been maintained, and membership activity has been sustained; this indicates that placation, as suggested in the previous Auxiliary studies, may not be necessary—that

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[66] Tilley, *The United States Coast Guard Auxiliary: A History 1939–1999*, 114–117, 140–143, 155–158.

volunteers continue to join and serve in the Auxiliary despite some documented complaints. This analysis uses Coast Guard records, data, and documents to identify the current level of resourcing assigned to support the largest and most resource-dependent operational Auxiliary programs. In this context, "operational" means that a volunteer's participation in the activity directly assists the Coast Guard in performing one of its statutory missions. The operational sub-programs are the Auxiliary's *raison-d'être* and represent the primary deliverables or fruits of the overall Auxiliary program.

The literature review indicated that a case study for volunteer resourcing optimization is not readily available. Additionally, the modeling technique does not apply itself to comparing the aspects of existing volunteer activities and desired volunteer support.

A policy analysis was chosen because the Auxiliary programmatic resourcing and tasking is not fundamentally broken, and there is no clear standout flaw or issue to be addressed. It is anticipated that there are opportunities to increase the Auxiliary's overall mission support to the Coast Guard and to improve the organization's strategic placement, while also considering the appropriateness and cost of those opportunities. The present austere federal budgetary environment, an environment in which the Coast Guard even "taxed" the already minimal resourcing of the Auxiliary program, requires this assessment.[67] Acknowledging the constrained resourcing, Coast Guard leadership should be presented with information regarding the costs and benefits of current and potential Auxiliary activities—information necessary to make policy decisions regarding the Auxiliary.

Assuming a resource-neutral approach—e.g., no *additional* organizational support in the form of full-time Coast Guard employee staffing or Auxiliary programmatic funding—this study:

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[67] "Taxing" is a process by which various levels of Coast Guard leadership harvest resources (people and money) from subordinate commands to support other priorities. The Auxiliary program management division at Coast Guard Headquarters (CG-BSX-1) was "taxed" in January 2012, resulting in the permanent reduction of its staff from eight to seven and a five-percent reduction of its office budget ($53,000). Stephen J. Minutolo (CG-BSX-1 Chief of Administration Branch), in discussion with the author on January 25, 2012.

- Assess the costs and contributions attributable to existing Auxiliary operational sub-programs;

- Discusses statistical trends in Auxiliary volunteer demographics and support for Coast Guard missions;

- Attempts to identify current Auxiliary volunteer activity interest—through quantitative analysis of actual activity versus qualitative questionnaire; and

- Presents a recommendation to implement a change to the Auxiliary program to increase return on investment, improve contingency readiness, and to better align with Coast Guard mission-support needs over the next several years.

B.   KEY ASSUMPTIONS

A key assumption in this study is there is no room to further "optimize" general Auxiliary programmatic overhead expenditures. This study does not examine the approximately 53% of the Coast Guard expenditures attributed to General Auxiliary Administration (see "Coast Guard Resourcing of the Auxiliary Program" in Chapter IV for a programmatic resourcing breakdown). This general "overhead" expenditure supports recruiting, administering, encouraging, and training volunteers for general participation in the Auxiliary and integration with the Coast Guard organization. Following several years of inflation with no funding increases and other benefactor programs ending financial support to the Auxiliary, the program has already likely "optimized" its non-operationally directed expenditures.[68]

Two elements of Auxiliary program resourcing were placed squarely in the category of General Auxiliary Administration in order to facilitate and simplify the analysis; they include the $2.7M presently distributed among the 14 regional Director of Auxiliary offices, and the $870K attributed to the salaries of the seven full-time Coast Guard employees who comprise the Auxiliary Program Management Office (CG-BSX-1)

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[68] "Taxing" is a process by which various levels of Coast Guard leadership harvest resources (people and money) from subordinate commands to support other priorities. The Auxiliary program management division at Coast Guard Headquarters (CG-BSX-1) was "taxed" in January 2012, resulting in the permanent reduction of its staff from eight to seven and a five-percent reduction of its office budget ($53,000). Stephen J. Minutolo (CG-BSX-1 Chief of Administration Branch), in discussion with the author on January 25, 2012.

at Coast Guard headquarters. A portion of the distributed funding and a portion of the headquarters staff time are actually spent supporting the studied operational programs. A closer and more complicated analysis that breaks down these two elements completely would likely reduce the resourcing attributed to General Auxiliary Administration to less than 50%, but would likely make little to no change in the proportional resourcing of the studied programs. An accurate comparison of the *relative* resourcing requirements of the studied sub-programs, rather than the precise dollar figure, is the goal of this effort.

Another significant and even more impactful assumption in this study is that it does *not* attempt to identify or study the millions of dollars that indirectly or tangentially support Auxiliary programmatic activities contributed from other Coast Guard programs. The regional Auxiliary programmatic support provided by various Coast Guard Operational Commanders is also not covered by this study. Additionally, thousands of Coast Guard personnel, outside of direct full-time Auxiliary program management roles, most likely spend on the order of a million man-hours training, supporting, and working alongside Auxiliarists. This study only analyzes Coast Guard resources specifically and directly attributed to the Auxiliary program; to include a study of indirect funding and full-time equivalent salary expenditures would require a Coast Guard wide survey and would divert thousands of man-hours away from the Coast Guard's important missions. These significant contributions—*which likely dwarf the actual direct Auxiliary programmatic resourcing being studied*—are acknowledged, but will not be included in this analysis because the Coast Guard makes organizational decisions based on programmed resourcing, not indirect support.

In the early 1960s (the precise date was not identified), the Coast Guard authorized the Auxiliary to file and maintain a non-profit "501(c)3" tax-exempt organization. The volunteer leaders of the Auxiliary are also on the board of the tax-exempt "Coast Guard Auxiliary Association, Incorporated" (Aux Inc.). The stated goal of the organization is "Supporting the U.S. Coast Guard Auxiliary in promoting boating

safety including educational, outreach, and other activities."[69] A significant portion of individual Auxiliary member annual dues end up in the coffers of Aux Inc; Aux Inc. reported just over $390K from membership dues alone on its 2010 tax return, filed on October 31, 2011. Over $1M is annually brought in and dispersed through Aux Inc. activities. Auxiliarists (de facto members of Aux Inc.) are encouraged to view that tax return on the Auxiliary Association web site. In addition to funding corporate expenses such as travel for the board and senior members ($289,672 travel expenses were reported on the 2010 tax return), Aux Inc. also funds some expenses that would otherwise necessarily be funded by the Coast Guard. Similar to the indirect support provided by other Coast Guard programs, the support provided by Aux Inc. is acknowledged but not included in this analysis.[70]

Additional specific assumptions and limitations key to this study are found in Appendix A—Research Method Data Assumptions and Limitations. These assumptions and limitations are articulated to assist future researchers seeking to use the data presented herein for other purposes. It is important to keep in mind that this study analyzes and compares Auxiliary sub-programs to one another; the assumptions and limitations of the data should be considered if the intent is to apply the data differently.

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[69] U.S. Coast Guard Auxiliary Association, Incorporated website. The stated purpose is indicated at the top of the organization's tax form. U.S. Coast Guard Auxiliary Association, "Documents," (n.d.), http://cgauxa.org/documents.html.

[70] Ibid.

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IV. DATA PRESENTATION AND ANALYSIS

A. AUXILIARY PARTICIPATION

1. Major Auxiliary Activities—FY 2011

Fiscal year 2011 (October 01, 2010 through September 30, 2011) was specifically studied as representative of the present state in the Auxiliary program. Trends in volunteer activity were also reviewed. The number of volunteers and the number of hours they self-reported participating in each Auxiliary program was collected directly from the AUXINFO database.

The six largest operational activities of the Auxiliary program—those with the most participants and logged the most volunteer service hours—were identified and reviewed, keeping in mind the end goal of measuring return on investment and direct contribution to the success of the Coast Guard. These six activities encompass most of the Auxiliary's operational activities. They also represent the majority of volunteer participation and required Coast Guard resourcing. Numerous other activities exist, but they are either Auxiliary membership-centric (no measurable organizational outcome in support of Coast Guard missions) or require negligible resourcing; the other activities were, therefore, not studied.

The volunteer members of the Auxiliary self-report their activities through their local organizational element called a flotilla, which normally ranges in size from 20 to 30 people. There are approximately 1,000 flotillas in the Auxiliary at any given time (flotillas are regularly formed and disbanded). Member activities, the time duration attributable to each activity, and the direct outcome (e.g., vessels examined, students taught, property or lives saved), is recorded through a Coast Guard owned Internet-accessed program called AUXDATA. This program, brought online in mid-2002, manages member contact information, qualifications, and performance—in the form of

hours served and reported results of that service. AUXDATA forwards reported information, scrubbed of any personal information, to another Internet-accessed program called AUXINFO.[71]

Activity Description	FY 2011 Volunteer-Hours	Percent of Total Hours	"AUXINFO" Category
Internal Auxiliary Admin	3,458,868	71.2%	RBS (99), MT, CGADMN
1) Surface Operations Support (Boat)	473,779	9.7%	Includes AUXMP, SAR, MS, MEP, and GOVSUP hours
2) CG Unit Support	249,906	5.1%	CGOPS
Public Affairs	180,241	3.7%	UPA
3) Public Education	115,066	2.4%	UPE
4) Marine Safety	105,986	2.2%	MS
5) Vessel Examination	100,525	2.1%	VSC
6) Air Operations Support (Aircraft)	52,382	1.1%	Includes SAR, AUXMP, MS, ICE, MEP, and GOVSUP hours
All Other Activities	124,403	2.5%	
FY 2011 Total	4,861,156	100.0%	

Note: The numbered activities, also referred to as sub-programs, are the six studied for return on investment and are described below.

Table 1.   FY 2011 Major Auxiliary Activities[72]

The six largest, most resource-dependent, operationally oriented Auxiliary activities described in the Auxiliary Manual and captured in AUXDATA, are denoted with an asterisk (*) in Table 1. "Public Affairs," as indicated in Table 1, was not reviewed because while about 6,000 hours (of 180,000 hours) were devoted to actual

[71] U.S. Coast Guard Auxiliary statistical information captured in AUXINFO is openly available at https://www.auxinfo.uscg.gov/cognos/cgi-bin/upfcgi.exe .

[72] AUXINFO, Online Database, (n.d.), https://www.auxinfo.uscg.gov/cognos/cgi-bin/ppdscgi.exe.

Coast Guard Public Affairs augmentation, the overwhelming majority of the time in this category (approximately 97% of "Public Affairs") is attributable to Auxiliary-centric projects such as flotilla website maintenance, member publication writing, and event participation.[73] Additionally, while some Coast Guard resources are expended to provide formal public affairs training to Auxiliarists, it is to a lesser degree than most of the six other activities.

As represented in Table 1, 75% of the volunteer hours performed in fiscal year 2011 consisted of internal Auxiliary activities (includes public affairs). These activities represent Auxiliary organizational meetings, training, and social events, but also include Auxiliary self-management—Auxiliarists providing counseling to other members, preparing and processing awards and recognition, conducting investigations, and record keeping. The performance of actual Coast Guard support duties represents approximately 25% of an average Auxiliarist's time. This is **not** necessarily indicative of inefficiency; it is likely to be similar to even non-volunteer organizations with similar duties. Consider any profession: There is a considerable amount of time normally dedicated to training, administration, and other supportive or preparative activities. While the Auxiliary spends the majority of its time performing internal activities, these activities incur only minor expense to the Coast Guard and are necessary to prepare the volunteers to perform their operational duties with the high levels of safety and professionalism expected of them. Additionally, Auxiliarists report **all** of their organizational activities, even attending recreational events such as barbeques and holiday parties; the fellowship and camaraderie that bonds volunteers is often what keeps them volunteering. If one were able to isolate the reporting of fellowship events among the three AUXINFO categories that comprise Internal Auxiliary Administration, it would greatly increase the reported relative percentage of time performing operational support duties.

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[73] AUXINFO, Online Database.

The six Auxiliary activities studied comprise almost 23% of that service providing 25%, or 92% of all operational activities. Included in the 8% not being studied are the efforts of Auxiliarist radio operators, interpreters, and doctors, to name a few. These unstudied activities are limited in Auxiliarist participation, Coast Guard resourcing demands, and large-scale Coast Guard organizational outcomes.

The major Auxiliary operational activities identified in Table 1, in decreasing order of volunteer participation are:

1. Surface Operations Support—Auxiliarists, using Coast Guard approved personally owned boats, and occasionally Coast Guard owned boats, directly support Coast Guard operations. These activities include observation and safety patrols on the water, and are often in support of major public boating events such as regattas or summer holiday weekends.

2. Coast Guard Unit Support—Many Auxiliarists are trained and then permitted to assist and work directly alongside Coast Guard members at operational units, performing duties normally and otherwise conducted by Coast Guardsmen, civilian employees, or contractors. Limits regarding permitted Auxiliarist activities, to include a specific exclusion from participation in law enforcement activities, prevent the volunteers from engaging in otherwise unauthorized and inappropriate activities.

3. Public Education (PE)—In support of RBS, Auxiliarists offer boating fundamentals and safety oriented classroom instruction to the public. There is usually a nominal charge for the courses to offset training materials expenses and to assist with other local Auxiliary expenses. While some jurisdictions require that a boater must complete a boating safety course, there are many course providers; the Auxiliary is one of them.

4. Marine Safety—Also referred to as "Prevention," the Marine Safety field is a major Coast Guard mission area which employs a large number of Coast Guardsmen and actually encompasses three of the Coast Guard's 11 statutory missions: Marine Safety—ensuring the safety of ships and navigation, Marine Environmental Protection—preventing and responding to environmental hazards (e.g., oil spills), and Ports Waterways and Coastal Protection—ensuring the physical security of marine terminals and shipping access to U.S. ports. Some Auxiliarists complete technical qualifications and training, and go on to assist Coast Guard regulators in the enforcement of federal shipping and environmental protection law. Auxiliarists have no regulatory authority.

5. Vessel Examination (VE)—In support of recreational boating safety (RBS), Auxiliarists offer courtesy (free of charge and attribution-free) Vessel Safety Checks (VSCs) to the public, where trained volunteers

examine a public participant's watercraft to identify hazards and to verify the presence of Coast Guard required safety equipment. A passed VSC earns the public participant a decal indicating the year the vessel passed the VSC. VSCs are not regulatory or enforcement in nature; their goal is simply to promote RBS.

6.   Air Operations Support—Auxiliarists, using Coast Guard approved personally owned aircraft conduct aerial observation flights and logistical missions. Coast Guard Flag Officers (Admirals) are regularly shuttled to various locations using Auxiliary aircraft as the mode of transport.

2.   Historic Trends in Auxiliary Participation

a.   Total Auxiliary Membership

The Auxiliary originated in 1939 and was originally referred to as the Coast Guard Reserve, until the actual military Reserve was formed at the outset of WWII. The ranks of the Coast Guard's volunteers (renamed the Auxiliary) swelled during WWII and then dropped below 15,000 following the war. It was during the immediate post-war years that the Coast Guard identified and tasked the Auxiliary with the Recreational Boating Safety (RBS) mission. Supporting RBS remained the Auxiliary's only legislatively assigned mission, until a regulatory change in 1996 permitted Auxiliarists to assist in almost all Coast Guard related activities.

Figure 1 represents the force strength of all Coast Guard components between 1947 and 2011. The dark solid line represents the Auxiliary's membership strength. Due to their proportionately larger size, the Auxiliary and Coast Guard Enlisted components are represented on the scale to the right. This was done to depict historic trends in all components, but to maximize the scale in order to clearly identify variation.

The Auxiliary steadily grew from the mid 1950s to a high-water mark of just under 40,000 members in 1974. This coincides with the general growth of recreational boating in the U.S. After 1974, the variations in Auxiliary membership size depart from trends in U.S. recreational boating. Since then, the variation in membership size generally aligns with several Coast Guard policy shifts and major American events. While an in-depth discussion regarding why people historically joined or left the

37

Auxiliary is an interesting review of organizational culture, it falls outside the scope of this study. Of interest in this study are the activities of the members who do join, the outcomes of their effort, and the Coast Guard resources required to produce those outcomes. The important take-away from Figure 1 is that there are fluctuations in the size of all Coast Guard components; despite dips or adjustments in a component's size from year to year, the organization has shown steady growth over the past 60 years. The recognizable exception is the Coast Guard's Reserve component; the Reserve is less than half of the size it was in the 1960s—due to a change in federal regulations and Coast Guard funding limitations. There is no evidence to show that the overall membership in the Auxiliary is in decline; despite (or perhaps because of…) the increasing formality and organizational regulation of the Auxiliary, its strength shows stability.
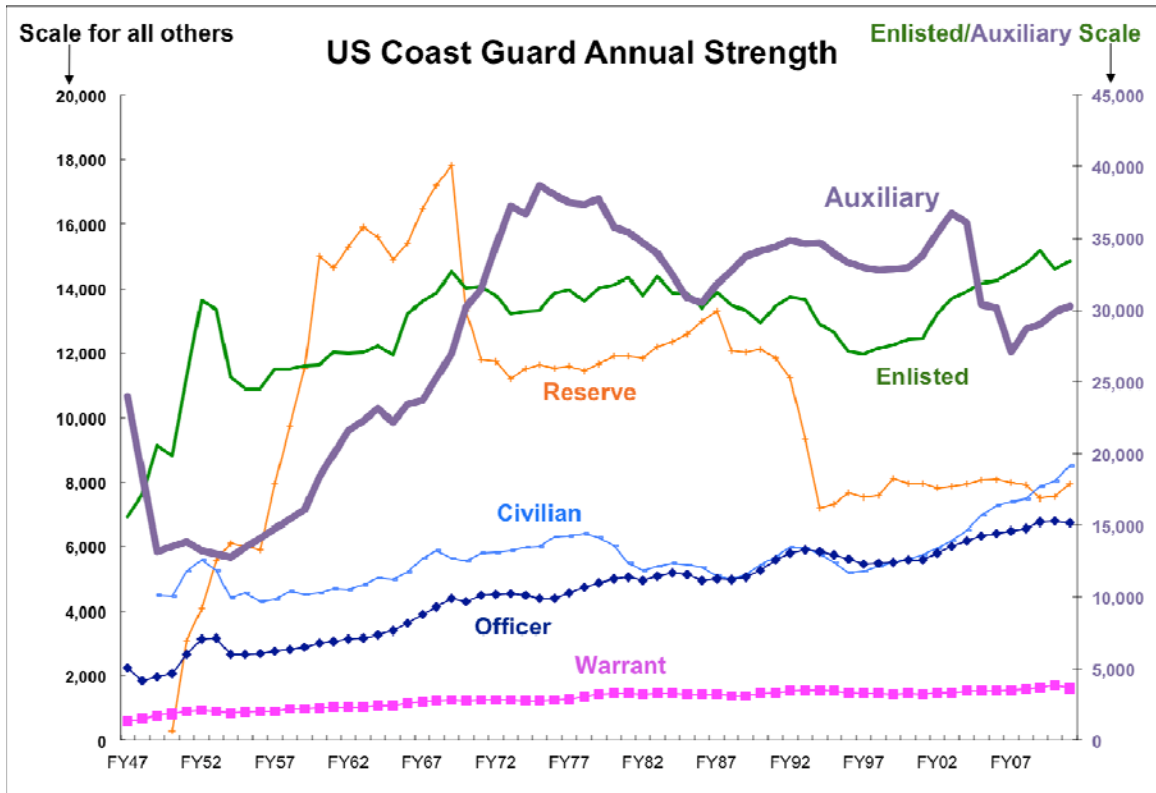
Figure 1.   Historic   Auxiliary   Membership—Represented   Alongside   All   CG
            Components[74]

Despite a measurable average membership net loss of about 100 volunteers per year over the past 25 years, that loss amounts to less than 0.33% of the total—much better than a similar volunteer organization. Described in the literature review, the U.S. Power Squadrons (USPS) is the largest non-profit recreational boating safety organization in the United States. USPS and the Auxiliary perform almost identical volunteer services, to include vessel safety checks, boating safety classes, and safety patrols on the water. During the same 25-year period, USPS lost, on average, over eight times as many members per year than the Auxiliary. As represented in Figure 2, the membership roles of USPS have plummeted in the past 20 years, while Auxiliary membership has maintained relative stability—and is currently growing. Although

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[74] Michael A. Billeaudeaux, e-mail message to author, November 16, 2011. "CG Historic Strength (1947–Present)." Auxiliary historic membership statistics were added to the original figure by the author. The original figure did not include the Auxiliary.

dramatic changes in the economy and boating appear to have had negative affects on several volunteer boating oriented organizations, the impacts have been felt less by the Auxiliary. Unlike USPS, the Auxiliary is directly sponsored by a federal government agency (the Coast Guard) and also performs a wide range of duties beyond just recreational boating safety.
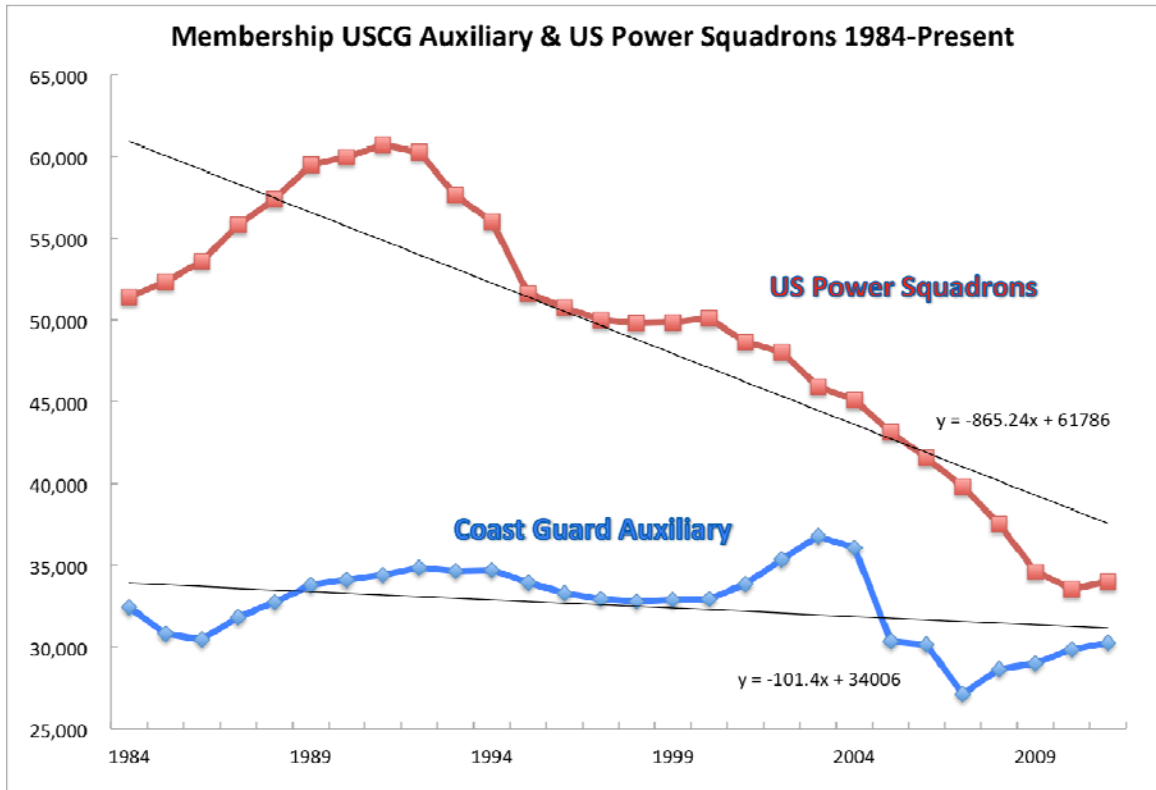
Membership USCG Auxiliary & US Power Squadrons 1984-Present

US Power Squadrons

Coast Guard Auxiliary

$y = -865.24x + 61786$

$y = -101.4x + 34006$

Note: The associated trend lines are a linear representation of the "curve." The number associated with "x" represents the slope or the average total change in membership from year to year between FY 1984 and FY 2011. On average, from 1984 to present, USPS has lost an average of over eight-times the number of members lost by the Auxiliary from year to year.

Figure 2.   Historic Auxiliary Membership—Compared to U.S. Power Squadrons Membership[75]

One naturally looks to the U.S. boating environment during this period of decline in USPS. Intuitively, the change in membership in a recreational boating safety

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[75] The referenced U.S. Power Squadrons annual membership numbers were provided by Mr. Frank A. Dvorak, the Chief Commander of the U.S. Power Squadrons at a conference in Chicago, IL on December 13, 2011.

organization should simply reflect the overall state of boating in the U.S. Shown in Figure 3, the numbers of U.S. recreational vessel registrations steadily grew through the 1980s and 1990s. It appears that the size of USPS grew, peaked, and then started to decline, relatively independent of the Nation's overall recreational boating activity. Following a several year plateau, the decline in USPS membership continued through what may turn out to be another plateau today. Also, during the 1980–2001 period of increasing boating activity, the relative size of the Auxiliary remained relatively constant. Membership in both organizations appears to be independent of general overall boating registration.
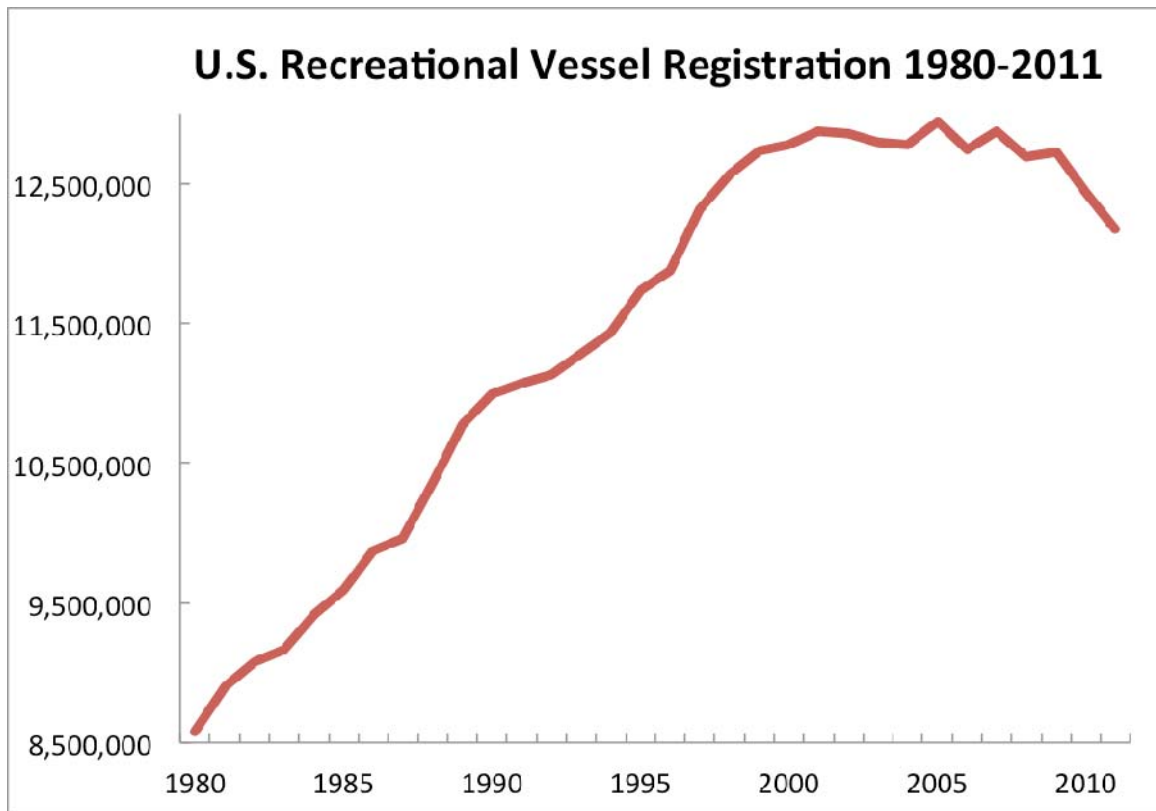
Note: The displayed vessel registration statistics were taken directly from the U.S. Coast Guard's 2011 Boating Statistics Report and are re-represented in a new Figure similar the Figure presented in the report.

Figure 3.   U.S. Recreational Vessel Registration 1980–2011[76]

[76] U.S. Coast Guard, Division of Boating Safety (CG-BSX-2), "2011 Boating Statistics Report–Commandant Publication, 16754.25," "Table 36: Recreational Vessels Registered by Year, 1980–2011," 65, (n.d.), http://www.uscgboating.org/.

So, why do people join boating safety oriented organizations? One theory is that some people, when taking on a new hobby or pastime, completely immerse themselves and "join everything." Perhaps some individuals new to recreational boating join the Auxiliary out of excitement for a new boating hobby.

Figure 4 is a graphic prepared by the National Marine Manufacturer's Association (NMMA) and displays the trends in retail powerboat sales. Of note, the retail powerboat industry boomed throughout the 1980s, primarily driven by the introduction of personal watercraft and the marketing of other less expensive boating platforms. Both USPS and the Auxiliary grew in the 1980s and stopped growing at the about the same time the retail boating sales numbers peaked in 1990. Both organizations' membership trends also similarly aligned with the following powerboat sales decline and several year plateau—up until September 11, 2001.
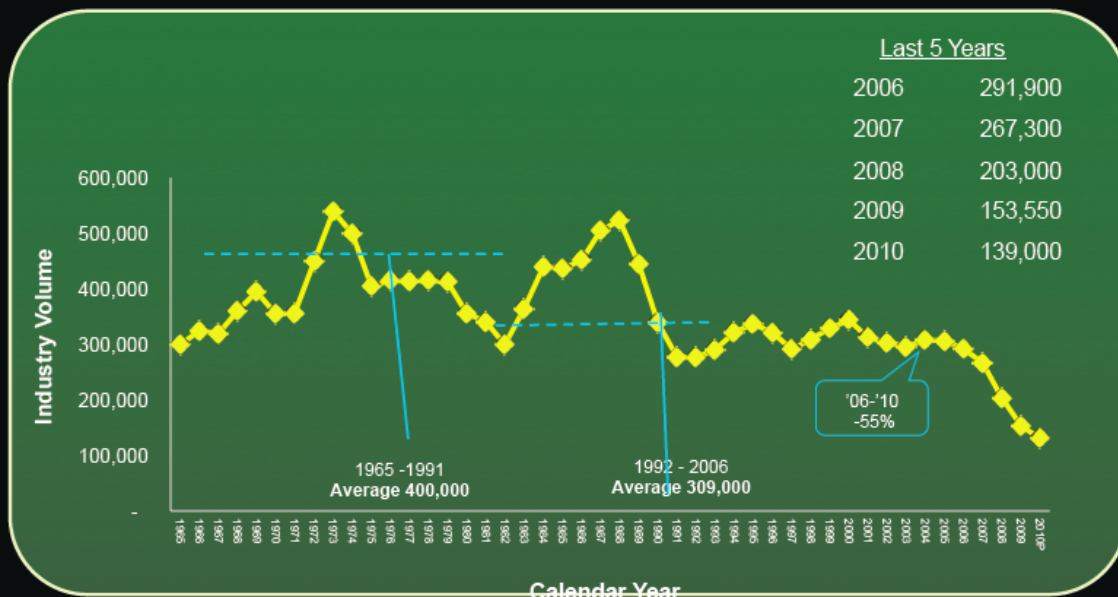
Note: The above is a reprint of a National Marine Manufacturers Association (NMMA) Figure.

Figure 4.   U.S. Retail Power Boat Sales 1965–2010[77]

Following 9/11, the membership of USPS began a steady 10-year decline from a membership plateau. This decline began several years in advance of the recent 2006 to 2010 decline in retail powerboat sales, which had remained somewhat stable for a few years following 9/11, until the overall dip in the U.S. economy caused a dramatic decline in boat sales.

The attacks of September 11, 2001 had a far-reaching and history-changing impact on Americans and the world. While the events directly impacted New York City, Washington, DC, and Shanksville, Pennsylvania, the strong sense of

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[77] National Marine Manufacturer's Association (NMMA), "Recreational Boating Industry Trends" Power Point Presentation. Presented at the Boating Stakeholders Growth Summit, Chicago, IL, December 11, 2011, Slide 2.

patriotism that swept the nation spurred many Americans to join the Auxiliary. As shown in Figure 5, membership in the Auxiliary surged throughout the nation.

Prior to 9/11, there was no background-screening requirement for membership in the Auxiliary; someone with a criminal or otherwise unfavorable background could be a member. In 2003, the implementation of post-9/11 Homeland Security standards required that Auxiliarists, existing and prospective alike, must submit to a background check. This background check, called "Personnel Security Investigation" (PSI), amounted to a background screening comparable to those performed by most large companies during pre-employment screening.[78] Regardless, many volunteers objected to this new procedure; approximately 6,000 Auxiliary members actively quit outright in 2004, and another 3,000 were administratively disenrolled for non-compliance with the PSI requirement in 2006.[79] Another factor having anecdotal support is the explanation that many Americans, swept by patriotic zeal, joined the Auxiliary; only after becoming members, did many realize that they had joined an organization whose primary purpose is to support recreational boating safety—and not direct conventional (armed) Homeland Security enforcement. Many people who joined the Auxiliary in 2002 and 2003 left the organization in 2004.[80] Worth further note, as shown in Figure 5, once background checks were formalized and the remaining membership had passed and accepted the screening as a prerequisite, membership in the Auxiliary grew again.

Interestingly, statistics regarding the numbers of fully qualified (participating) volunteers, and the number of volunteer-hours performed in the various Auxiliary activities, show a constant *upward* trend during this period. This will be studied in the next section. The dramatic loss of overall membership had no impact on the organization's performance; while data isolating the specific performance of those who leave the Auxiliary is not available, it is reasonable to generalize those who left the organization during this period likely offered limited contributions. The implementation

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[78] U.S. Coast Guard Auxiliary Manual, 3–13—3–21.

[79] Steven J. Minutolo (CG-BSX-1 Chief of Administration Branch), in discussion with the author, June 18, 2012.

[80] Ibid.

of the background check policy only temporarily stifled formal volunteerism in the Auxiliary—and it possibly indirectly raised the level of dedication of those who remained by removing people who could have been disreputable, disruptive, or otherwise distracting to the organization's mission.
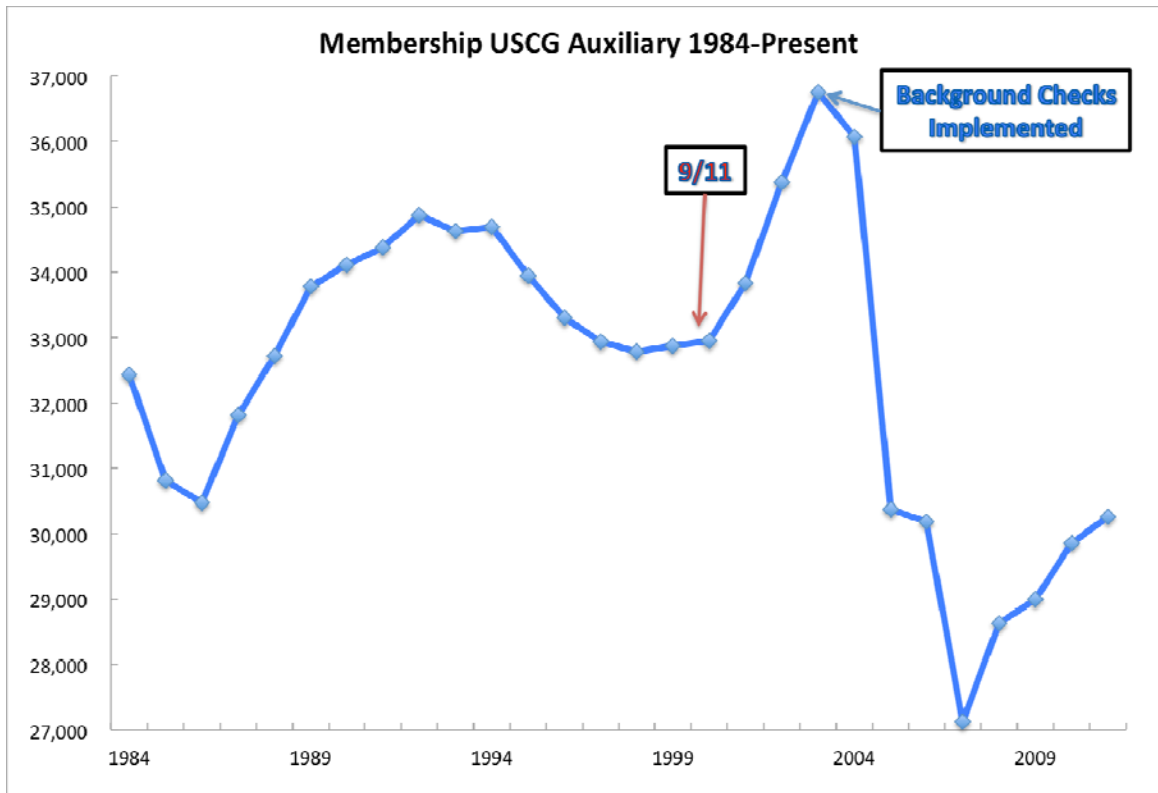
Figure 5.   The Effects of 9/11 and Coast Guard Policy on Auxiliary Membership

- Finding #1. Auxiliary membership numbers increase and decrease over time; Auxiliary membership is generally smaller than the past 40 years, but larger than the 30 years before that. National events and Coast Guard policies can be found to negatively impact membership over the short term. However, those negative impacts are temporary; volunteer interest remains and new members are regularly recruited.

- Finding #2. Volunteer membership in the Auxiliary has been generally independent of the trends in national recreational boating registrations. Since 2007, Auxiliary membership has grown despite declines in boating and boat sales.

45

b. *Auxiliarist Participation in the Operational Activities*

Functionally, since regulatory changes in 1996, and practically, since the formation of the Department of Homeland Security and the Coast Guard's new national status as a "Guardian," many who join the Auxiliary join with no interest in participating in recreational boating safety. Rather, many wish to support other Coast Guard operations and programs.

The total numbers of reported volunteer-hours contributed to each operational activity are represented in Figure 6. Interestingly, independent of the drop in membership from 2003 to 2007, five of the six programs reflected relatively consistent increasing volunteer participation. This prompts the rhetorical question, "How active were the individuals who left the Auxiliary?"
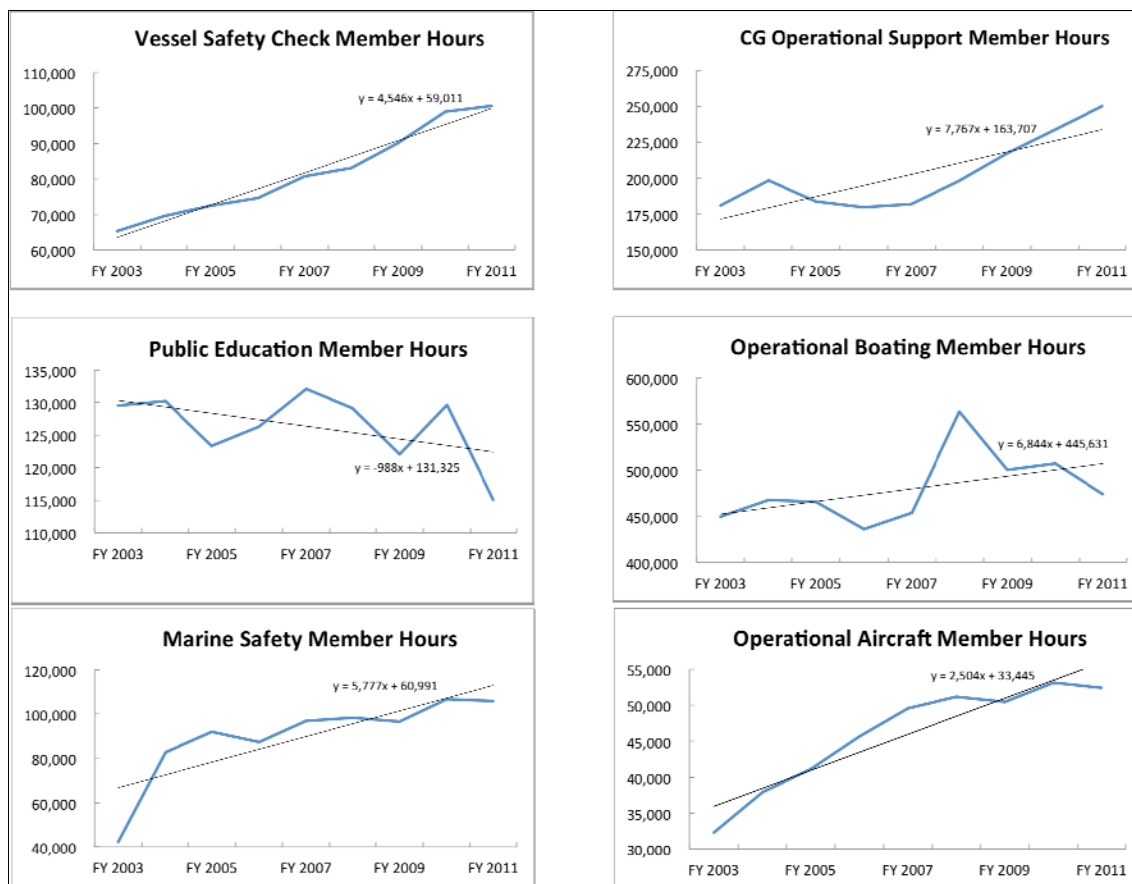
Note: The associated trend lines are a linear representation of the "curve." The number associated with "x" represents the slope, or the average total hourly change from year to year between FY 2003 and FY 2011. The scale for each activity is different and should not be used for direct visual comparison.

Figure 6.   FY 2003–FY 2011 Volunteer-Hours for the Primary Operational Activities[81]

Similarly, shown in Figure 7, the number of individual missions reported by each Auxiliarist generally increased over the past eight years. Public Education was the only activity that reflected a consistent decrease in activity. On average (see trend line), Auxiliarists participate in about 900 fewer classes across America each year. Public Education is the one Auxiliary activity that is completely dependent on public enrollment; regardless of a volunteer's level of interest, skill, and dedication, if the public does not enroll in a class, the class does not take place. Traditionally, there was only limited "competition" in boating safety public education; USPS was the only

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[81] AUXINFO, Online Database.

"competitor." There has been a tremendous growth in the number of boating safety training alternatives to the American public in recent years. This is, in part, because of the implementation of a boating safety course completion requirement in some jurisdictions of the country, and because of the growth of internet-based training delivery alternatives. One pursuing boating safety education has quite a number of choices, with varying delivery methods, complexity levels, and cost. "Competition" is in quotes because it is a matter of opinion whether the decline in the Auxiliary's traditional classroom Public Education program is indicative of a problem. One who simply wishes the boating public to receive safety awareness training, regardless of the source, would say that this may be indicative of success—that the training is now readily tapped from multiple sources. Others (often the Auxiliary perspective) may see this as a "loss of market share." Note: classroom fees, in addition to covering actual material expenses for a given class, are the largest source of organizational income for the Auxiliary. The loss of revenue in recent years has limited the support these funds traditionally provided to various Auxiliary functions and events.

Note 1: The associated trend lines are a linear representation of the "curve." The number associated with "x" represents the slope, or the average change in number of missions from year to year between FY 2003 and FY 2011. The scale for each activity is different and should not be used for direct visual comparison.

Note 2: This Figure represents the number of missions per Auxiliarist; this is represented to indicate volunteer participation. In a following section, the number of missions per facility (boat or aircraft) is represented to calculate a government expense for each mission performed. A boat that gets underway with two Auxiliarists is represented as two in Figure 7 but is represented as one in Table 6.

Figure 7.   FY 2003–FY 2011 Volunteer-Missions for the Primary Operational Activities

Figure 8 is a combination of the data represented in the previous two Figures and represents the trend in the annual average duration of each mission an Auxiliarist performed. In five of the six activities, the average duration of each mission varied by just several minutes from year to year. Surprisingly, this figure identifies that

49

the average duration of each Auxiliary Aviation mission (per Auxiliarist) has dropped by approximately 30 minutes, per year, over the past eight years. Efforts to identify a cause for this were unsuccessful. There were no Coast Guard Policy changes implemented limiting mission duration, and a similar number and type of aircraft are being employed. Anecdotally, comments regarding the cost of fuel, and resulting limitations on mission length, are often heard by the full-time program managers. However, this does not make sense because the Coast Guard reimburses the actual fuel expenses incurred when Auxiliarists operate their facilities (boats and aircraft) under Coast Guard orders. The trends in the number of Auxiliary facilities will be addressed later. While the other Operational Auxiliary mission durations have remained constant, there has been an unexplained dramatic reduction in the duration of Auxiliary aviation missions.
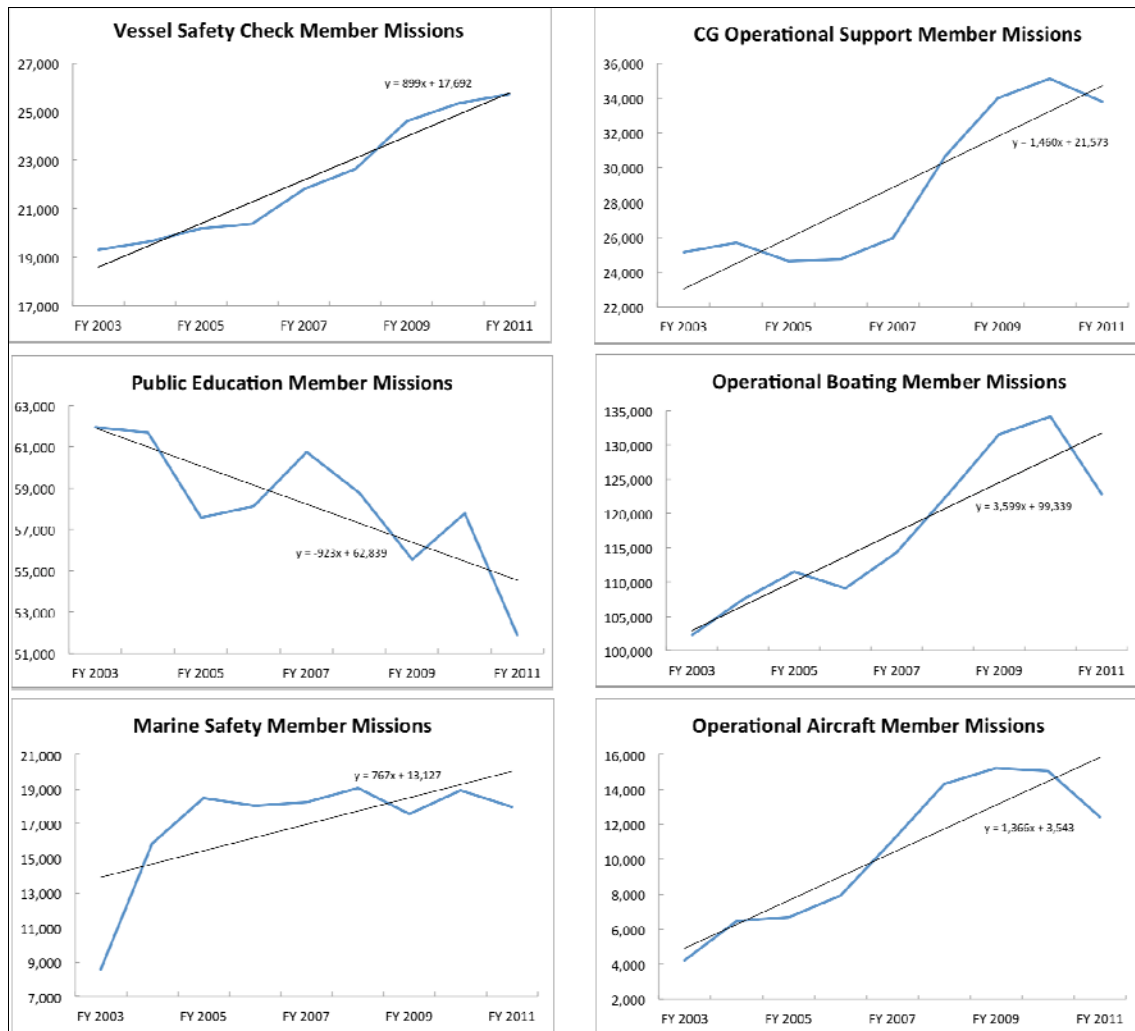
Note: The associated trend lines are a linear representation of the "curve." The number associated with "x" represents the slope, or the average total hourly change from year to year between FY 2003 and FY 2011. The scale for each activity is the same and <u>can</u> be used for direct visual comparison.

Figure 8.   FY 2003–FY 2011 Average Hours Per Mission (Per Auxiliarist) for the Primary Operational Activities

In order to participate in the various operational activities, Auxiliarists must be "qualified" or pass a course of instruction, evaluation, apprenticeship, and then display a particular level of competency. In order to maintain that qualification, various continuing education, training, and performance standards must be met. Figure 9 represents the annual total number of Auxiliarists qualified in each activity. There is no data available for the qualification of Auxiliarists who directly support Coast Guard

operational units because there are numerous job types, and qualification levels. Auxiliarist qualification in marine safety duties has only been formalized and tracked in recent years and offers no insight for this trend-review application.

The number of qualified public education instructors has steadily declined, in concert with the overall decline in that program. The number of Auxiliarists qualified to operate boats and aircraft have generally declined at a rate comparable to the overall decline in the numbers of facilities. One can intuit that when (qualified) boat/aircraft owning Auxiliarists leave the organization, they take their facility with them. The peculiarity in this Figure is the large dip and restoration in the number of qualified vessel examiners; between 2003 and 2011, there was an almost 15% decline—and restoration— in the numbers of qualified vessel examiners. No explanation for this, such as a policy change, was identified in the research. Perhaps existing qualified members quit the organization amid the background check exodus, and new Auxiliarists replaced them.
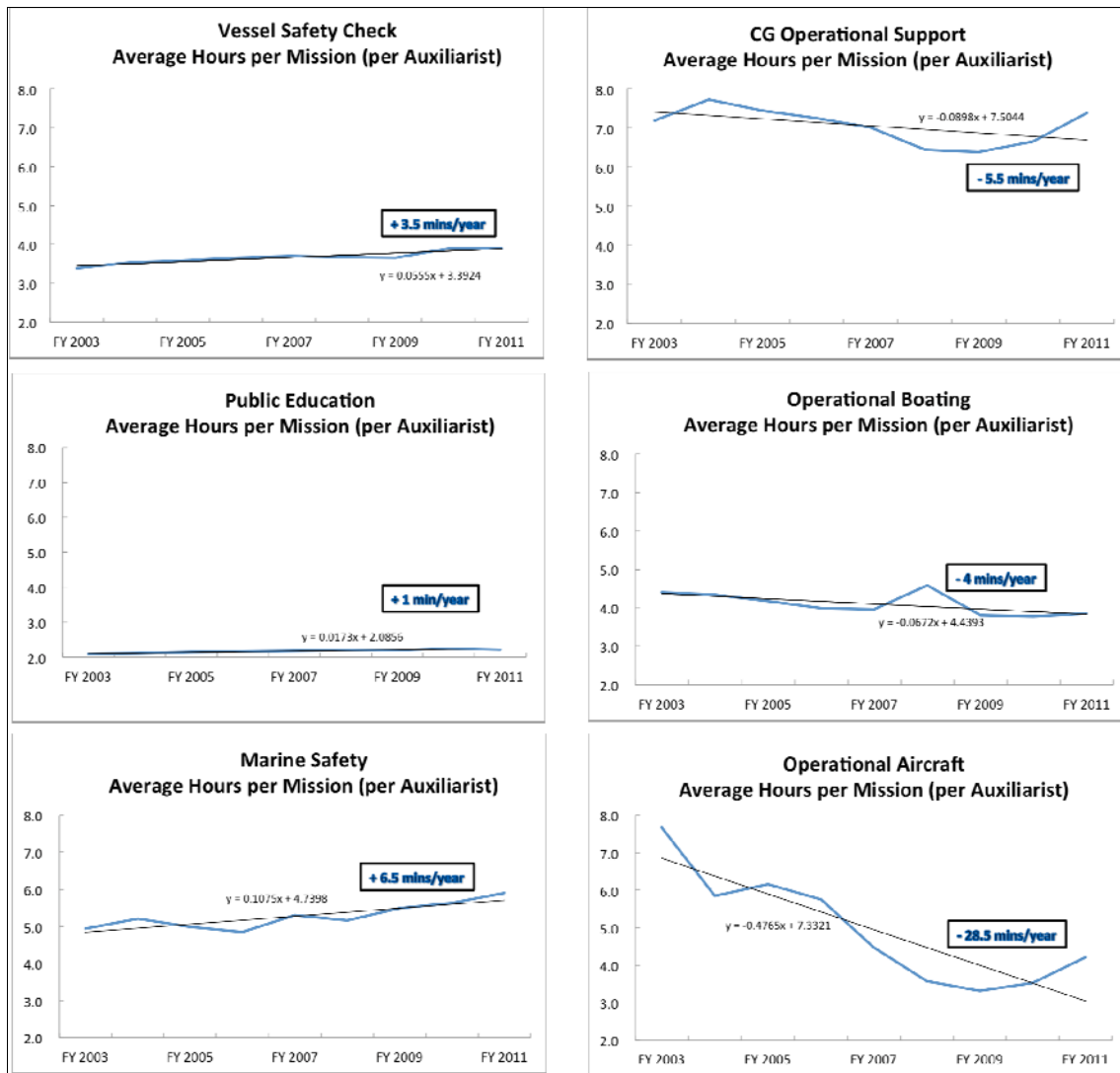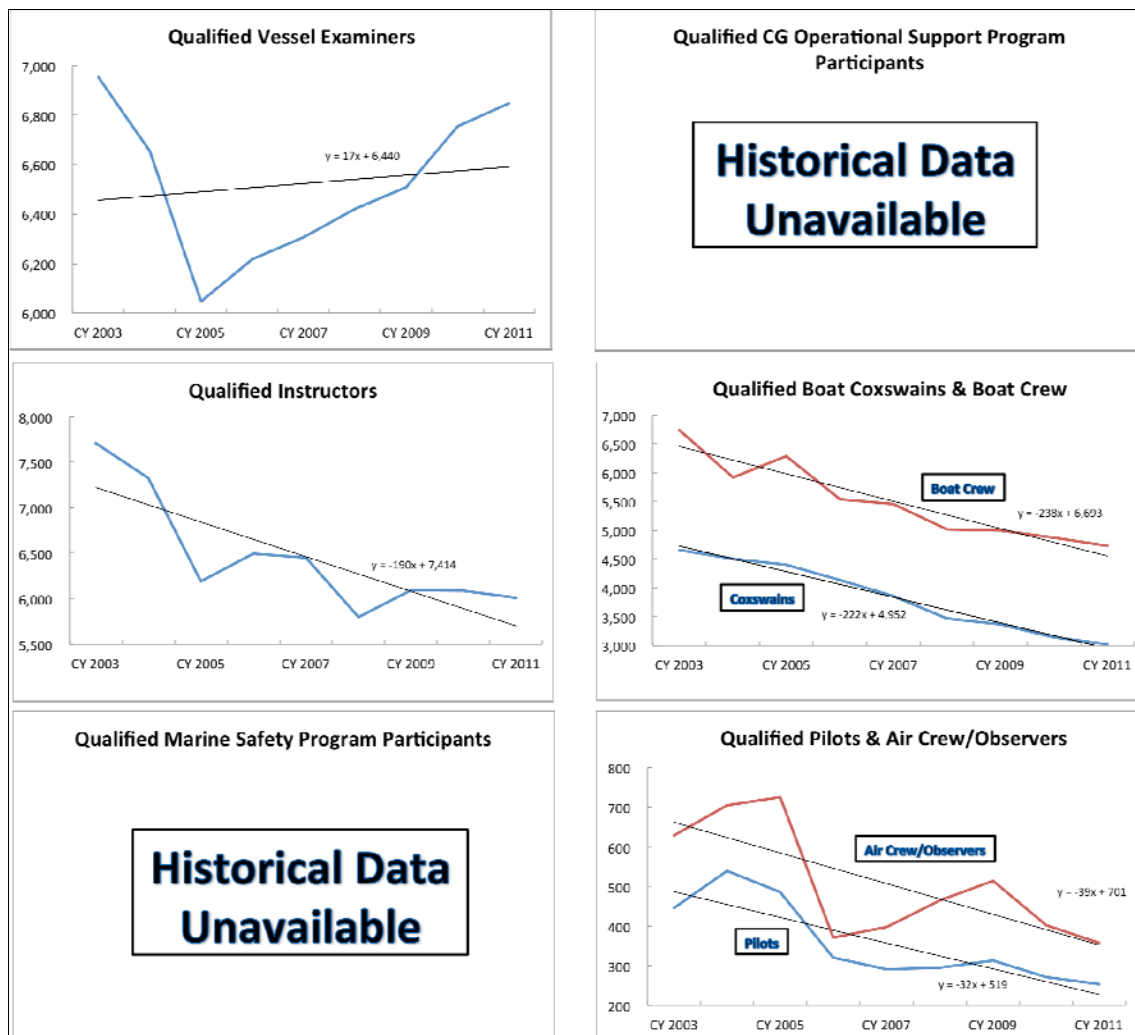
Note: The associated trend lines are a linear representation of the "curve." The number associated with "x" represents the slope, or the average total change in number qualified from year to year between FY 2003 and FY 2011. The scale for each activity is different and should not be used for direct visual comparison.

Figure 9.   Qualified Auxiliarists for Each Operational Activity, 2003–2011

The range of review shown in Figure 9, a review of the most recent several years, is typical among the other studies of the Auxiliary mentioned in the literature review. This relatively short period of time does not provide the perspective necessary to give an overall picture of long-term trends. The same 2003–2011 data found in AUXINFO and displayed in Figure 9 was researched at the Auxiliary Historical Archives at East Carolina University with several data gaps filled by the assistance of Commodore Tom Mallison. Figure 10 shows the same data as Figure 9, but with a

significantly longer period of reference. Figure 10 reflects the long-term trends of the Auxiliary sub-programs. As discussed in the literature review, the previous studies of the Auxiliary were only concerned with recent three to five year trends versus decades-long trends. A longer time scale of review offers a much different perspective and provides opportunities to identify cause, effect, and duration of impacts to volunteer activity.

Following a peak in the late 1970s there has been a relatively constant decline in the number of vessel examiners and public education instructors. Auxiliary-specific qualification requirements to operate boats and aircraft originated in 1985, before then, anyone who complied with other regulatory requirements (FAA, etc.) could participate. The numbers of coxswains and boat crew have been in a steady decline since 1996. There is no direct indication as to what started the decline. It may or may not be coincidence that 1996 was the year that the U.S. Code was modified to greatly expand the permitted duties of the Auxiliary. Perhaps the other Auxiliary activities are drawing participation away from the traditional activity of boat operation. The interesting anomaly in this Figure is the rapid surge and then decline in number of aircraft pilots and aircrew immediately following 9/11. No clear explanation was found for this in the course of this research. However, it does follow the general trend in aircraft being offered for use as facilities in the Auxiliary. Aircraft and boats will be addressed next.
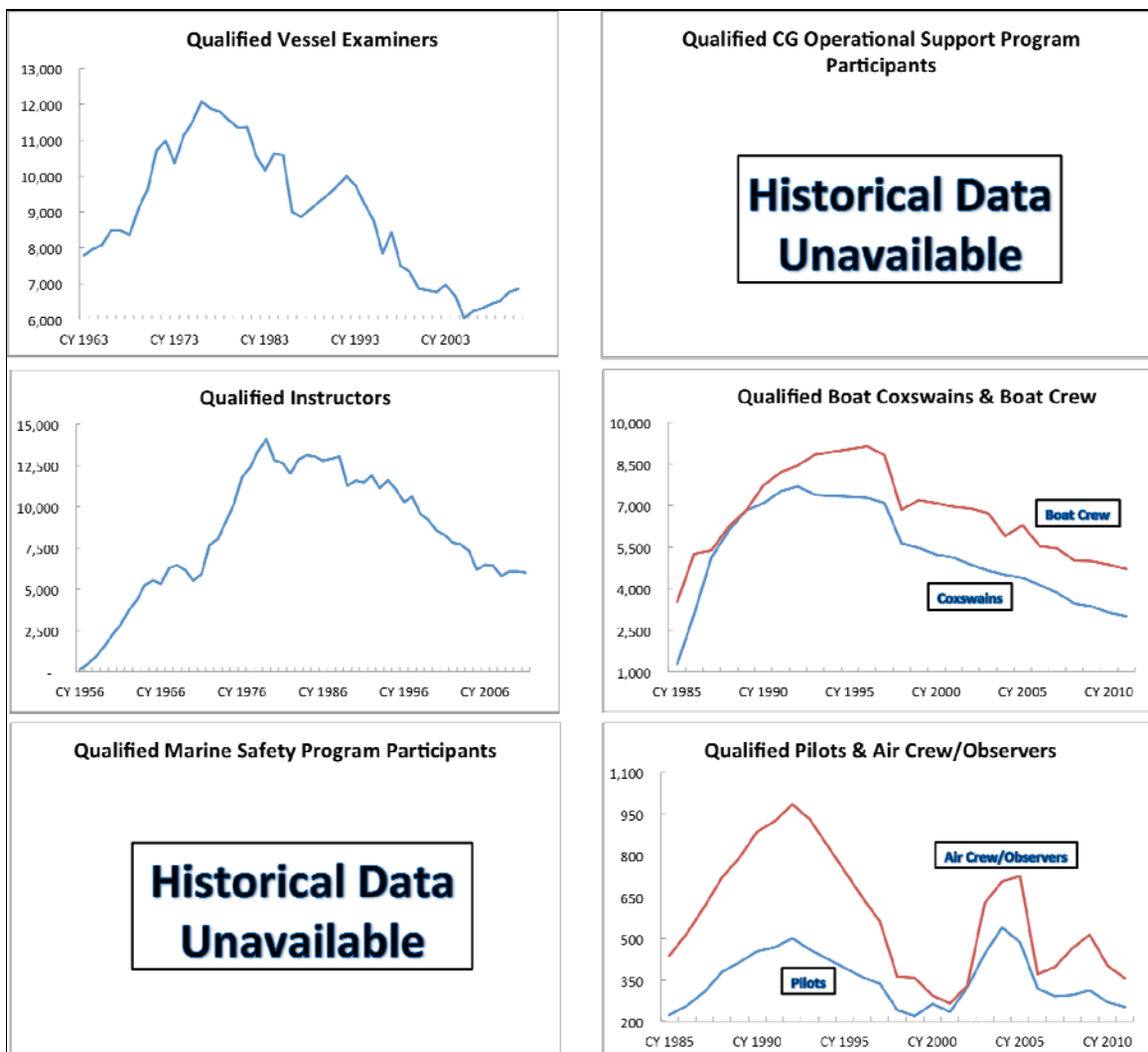
Note: Individual data values compiled through reviewing numerous documents found in the Auxiliary Historical Archives at East Carolina University. Remaining missing data was identified with the assistance of Commodore Tom Mallison. The scale for each activity is different and should not be used for direct visual comparison.

Figure 10. Historic Trends in Qualified Auxiliarists for Each Operational Activity, Various Year–2011
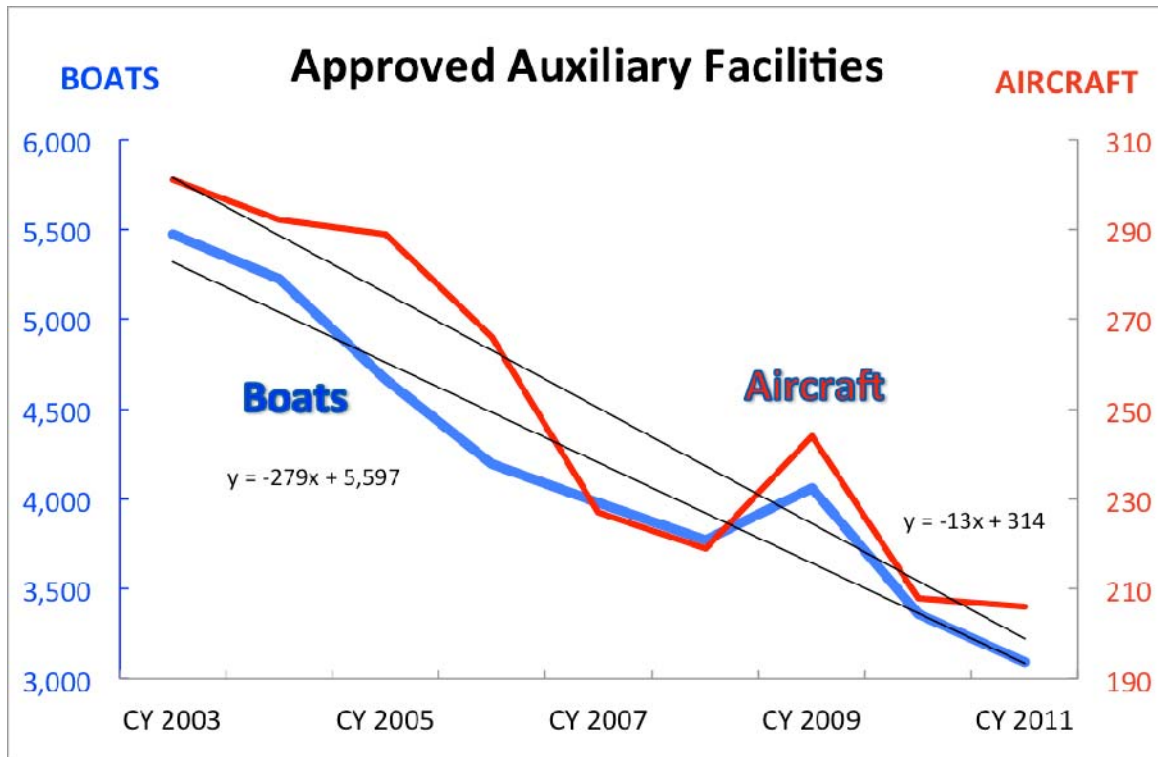
Approved Auxiliary Facilities

BOATS — AIRCRAFT

Boats

Aircraft

$y = -279x + 5,597$

$y = -13x + 314$

Note: The associated trend lines are a linear representation of the "curve." The number associated with "x" represents the slope, or the average total change in number of facilities from year to year between FY 2003 and FY 2011. The scale for each facility type is different and should not be used for direct visual comparison.

Figure 11.   Trends in Auxiliary Boats and Aircraft (Facilities) Accepted for Use, 2003–2011

Figure 11 represents the number of boat and aircraft facilities in use in the Auxiliary from 2003 to 2011. Note that the boat scale is on the left and the aircraft scale is on the right. This Figure represents a steady decline in both boat and aircraft facilities. On average, since 2003, the Auxiliary has on average about 279 fewer boats and about 13 fewer aircraft per year. However, much like the qualification discussion, when looking at the longer view, a different trend emerges. Figure 12 represents the number of boat and aircraft facilities from 1963 to 2011. The number of boat facilities has been in relatively steady decline since the early 1970s.

The number of aircraft facilities grew to a peak in 1991 and began to decrease through the 1990s. However, in the six years between 1997 and 2003, the number of aircraft *tripled* from 100 to 300. Then, the number sharply fell by a third to

approximately 200 by 2011. Two acronyms are likely explanations for this wild variation in the number of aircraft: "SAMA" and "TBO." Aviation Standard Auxiliary Maintenance Allowance (SAMA) is a financial reimbursement made by the Coast Guard to an Auxiliary aircraft owner, designed to partially reimburse the owner for a portion of the prorated overall expense to maintain the aircraft's engine, body, etc. The hourly rate is based on the size of the aircraft engine, and is generally well over $100 per hour. Historically, volunteers were only given reimbursements for fuel, not boat or aircraft maintenance. SAMA rates and reimbursement turn-around is a hot-button issue among Auxiliary aviators. Aviation SAMA issue complaints are the largest single source of U.S. Congressional inquiries (inquiring on behalf of their constituent) to the Coast Guard's Auxiliary program.[82] Not coincidentally, aviation SAMA was instituted in 1998, and the Auxiliary was "flooded" with aircraft and owners eager to fly them under this new reimbursement plan.[83]

Time Between Overhaul (TBO) is an aircraft maintenance requirement. Aircraft engine manufacturers identify a standard number of hours an engine should be operated before an overhaul is "recommended." This is an expensive maintenance event that some owners resist. This is akin to an automobile owner taking an automobile in for "recommended" maintenance based on mileage—often when the vehicle seems to be operating perfectly well—simply because an owner's manual cites a particular "recommended" action. Aircraft maintenance is much more expensive than automobile maintenance. But, when automobile engines fail, the vehicle coasts to a stop; when aircraft engines fail… In 2006, following a tragic and fatal Auxiliary aircraft crash, the Coast Guard instituted policy stating that in order to be accepted by the Coast Guard for use in the Auxiliary, all aircraft <u>must</u> be overhauled in accordance with the manufacturer's TBO "recommendation." This initiated a flurry Congressional Inquiries and various other efforts by some Auxiliarist aircraft owners seeking to circumvent this

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[82] Steven J. Minutolo (CG-BSX-1 Chief of Administration Branch), in discussion with the author, June 18, 2012.

[83] Michael D. Barner, Internal Coast Guard Headquarters White Paper to Coast Guard Deputy Commandant for Operations, "SAMA Background and Impacts of Denial," March 28, 2011, references COMDTNOTE 16798, October 16, 1998.

newly imposed safety measure. The prorated hourly aviation SAMA calculation, which originated in 1997, factors in the estimated TBO-compliance overhaul expense. SAMA was paid to the aircraft owners, without the Coast Guard actually verifying that the payments were used to maintain the aircraft, until 2006. It is reasonable to postulate that over 100 aircraft owners joined the Auxiliary in order to collect SAMA payments, and then left the Auxiliary when required to spend those funds on maintaining their aircraft.

In 2006, the Coast Guard initiated prorated SAMA reimbursements to the owners of Auxiliary boat facilities, based on the boat and engine size, similar to aviation. Estimates from industry show that while aviation SAMA supports roughly 75% of actual aircraft maintenance expenses, surface SAMA only supports roughly 35% of actual boat maintenance expenses.[84] Unlike aviation SAMA, the initiation of surface SAMA appears to have had no influence in the trend regarding the number of boats in the Auxiliary.

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[84] Barner, Internal Coast Guard Headquarters White Paper to Coast Guard Deputy Commandant for Operations, "SAMA Background and Impacts of Denial."

Approved Auxiliary Facilities

BOATS — AIRCRAFT

$y = 3.5x + 87.2$

$y = -293x + 16,881$
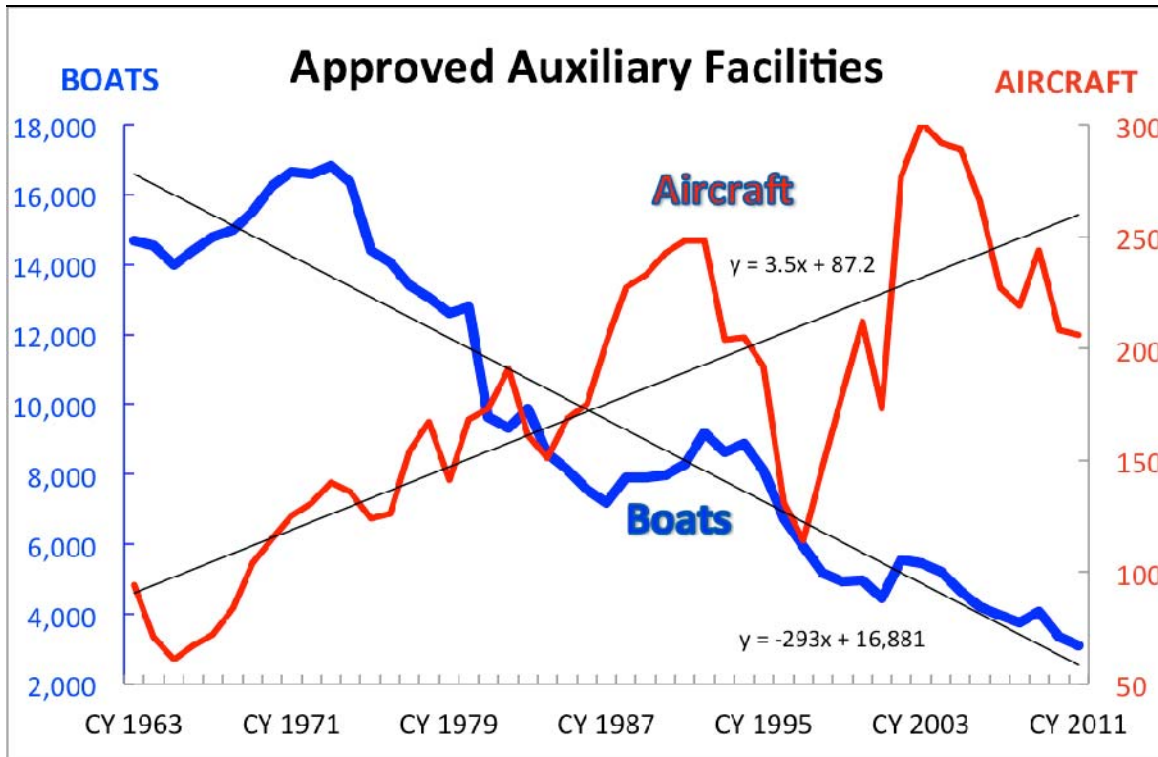
Note: The associated trend lines are a linear representation of the "curve." The number associated with "x" represents the slope, or the average total change in number of facilities from year to year. The scale for each facility type is different and should not be used for direct visual comparison.

Figure 12. Historic Trends in Auxiliary Boats and Aircraft (Facilities) Accepted for Use, 1963–2011

Figure 12 presents the historic numbers of boats and aircraft used in the Auxiliary. When an overall trend line is applied to the 1963 to 2011 figures for numbers of boats and aircraft, the 50-year trend in boat numbers aligns closely with that of the past eight years. The aircraft trend line actually indicates an average *increase* of three aircraft per year from 1963 to 2011. Figure 13 represents the year-to-year representation of aircraft in the overall Auxiliary fleet of operational facilities (boats and aircraft). Aircraft represent a steadily growing portion of all facilities, with the rate or slope of that growth dramatically increased since the late 1990s.

In addition to the overall decrease in the number of boats, the representation of boats has decreased; stated differently, the ratio of Auxiliarists per boat has grown almost five fold. Referring to membership data represented in Figure 1 and

boat facility data represented in Figure 12, there were 37,281 Auxiliarists with 16,814 boats in 1973, and 30,257 Auxiliarists with 3,094 boats in 2011; that equates to a shift from 2.2 Auxiliarists per boat in 1973 to 9.8 Auxiliarists per boat in 2011. With an average flotilla size of approximately 30 members, the basic Auxiliary membership unit has shifted from having about 14 boats down to three boats. This loss in boats has dramatically affected the depth and variety of waterborne platforms and limits the access of non-boat owning volunteers who seek to participate on the water.
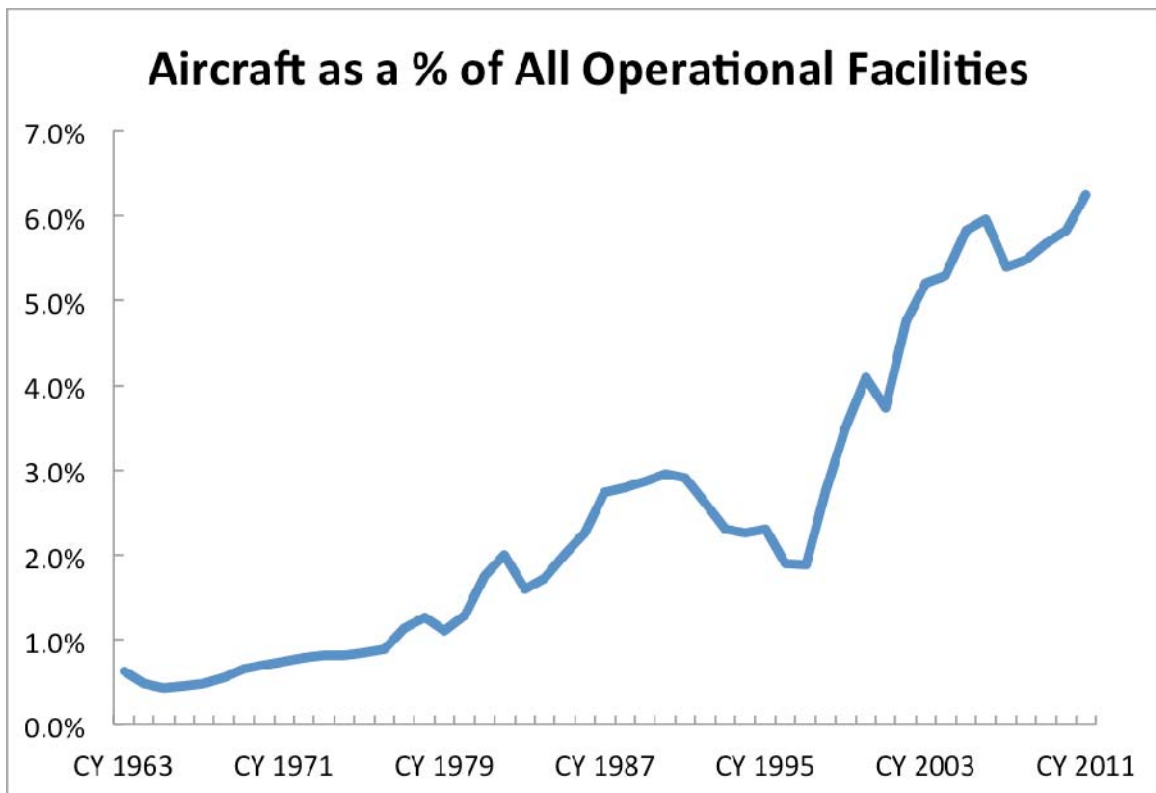
Figure 13.   Relative Representation of Aviation Auxiliary Facilities, 1963–2011

- Finding #3. The average duration of Auxiliary Aviation missions is in decline while the duration of all other missions is relatively constant.

- Finding #4. The number of operational hours served and missions performed in Surface and Air Operations Support is increasing despite a general decline in the number qualified participants. Fewer qualified volunteers are reporting more hours and missions.

- Finding #5. The relatively constant 50-year declining trend in the number of surface facilities (boats) is independent of national retail powerboat sales and Coast Guard financial support (SAMA).

- Finding #6. The offering of aircraft for use as Auxiliary facilities is largely dependent on the degree of Coast Guard financial subsidization (SAMA) and maintenance requirements (TBO).

- Finding #7. There has been a three-fold increase in the presence of aircraft as a percentage of all operational facilities since the institution of aviation SAMA in 1997.

B. AUXILIARY DEMOGRAPHICS

1. The Present

The demographic make-up of the Auxiliary is not a factor that has been tracked and recorded over the years. Therefore, this study cannot present what the demographic makeup of the Auxiliary was at any past point, and cannot identify if there were any changes in the overall demographic over time. This section reviews the present Auxiliary make-up and the racial/ethnic trend of the overall U.S. population. For clarity, the racial/ethnic demographic information is presented as it is currently recorded in the AUXDATA system; this delineation does not match conventional U.S. government standards and is in need of adjustment as discussed below. According to Hispanic Research, Inc., the U.S. Government in 1977 established that American Indian, Alaskan Native, Asian or Pacific Islander, Black, and White are racial classifications. Ethnic classifications include Hispanic origin and Not Hispanic origin.[85] One has both a race and an ethnicity. Despite its conventional inaccuracy, this data is a depiction of the Auxiliary membership demographic and is useful.

In the course of conducting research at East Carolina University, one report in the 1970s and another in the 1980s identified the number of women in the Auxiliary, but did not provide enough information to be of use in discussing organizational trends. The reports did, however, indicate that the Coast Guard at that time was making an effort to

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[85] Hispanic Research, Inc., Why Doesn't the Census Include Hispanic As a Race? (n.d.), http://www.hispanicresearch.com/hispanic-market-data/faq/87-why-doesnt-the-census-include-hispanic-as-a-race.

increase the representation of women in the Auxiliary. Presently, women comprise 22.3% of Auxiliary membership. More than half have of all women in the Auxiliary share a home address with another Auxiliarist; it is assumed that in the majority of cases, this cohabitant is a spouse.[86] While some women may join the Auxiliary along with a spouse, there is no participation gap between men and women; women are active participants involved in every activity and their representation in regional and National leadership positions is comparable to their overall membership.

Members of the Auxiliary self-report their date of birth, their gender, and their (single) affiliated race/ethnicity. That data is entered into the member's AUXDATA profile. When demographic reports are run in AUXINFO, the information returned represents the active membership; there is no way to run a historical demographic report—a report of *past* members is not currently possible, and past demographic reports are not maintained. With that clarified, a "snapshot" of the demographic profile of the Auxiliary was recorded on December 17, 2011 and is represented in Figures 14 and 15. Unfortunately, 16.5% of Auxiliary membership did not self-select and report their race/ethnicity in AUXDATA; the presented information represents the 83.5% of Auxiliary membership who <u>did</u> self-select and report their race/ethnicity.

The AUXINFO demographic categories include five categories: "White," "Black," "Hispanic," "Asian," and "Native American." While limiting in its depiction of race/ethnicity—there are only five categories and there is no allowance to choose multiple race/ethnicities—this is the available data, and is represented herein as an indicator of the degree of Auxiliary membership diversity. Ideally, the AUXDATA database should be modified to match contemporary racial and ethnic definitions, and permit the selection of multiple depictions. This exemplar is indicative of limited resourcing for computer programming support and is *not* representative of Coast Guard oversight or bias.[87] If the recommendations of this study (discussed in Chapter V) are carried out, this and other database programming issues should be resolved.

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[86] AUXDATA, Online Database.

[87] Minutolo, in discussion with the author, June 18, 2012.

The demographic reports include the numbers of Auxiliarists in the represented age-bands, and their sex and race/ethnicity ("none reported" is a sixth category that is not displayed). Figure 14 shows each of the 10 groups as a different colored line and the age-band groupings from left to right. The top-most line represents the "Male (White)" members, followed by "Female (White)" members well below. All of the other groups have small enough numbers that they are indiscernible at the bottom of Figure 14.
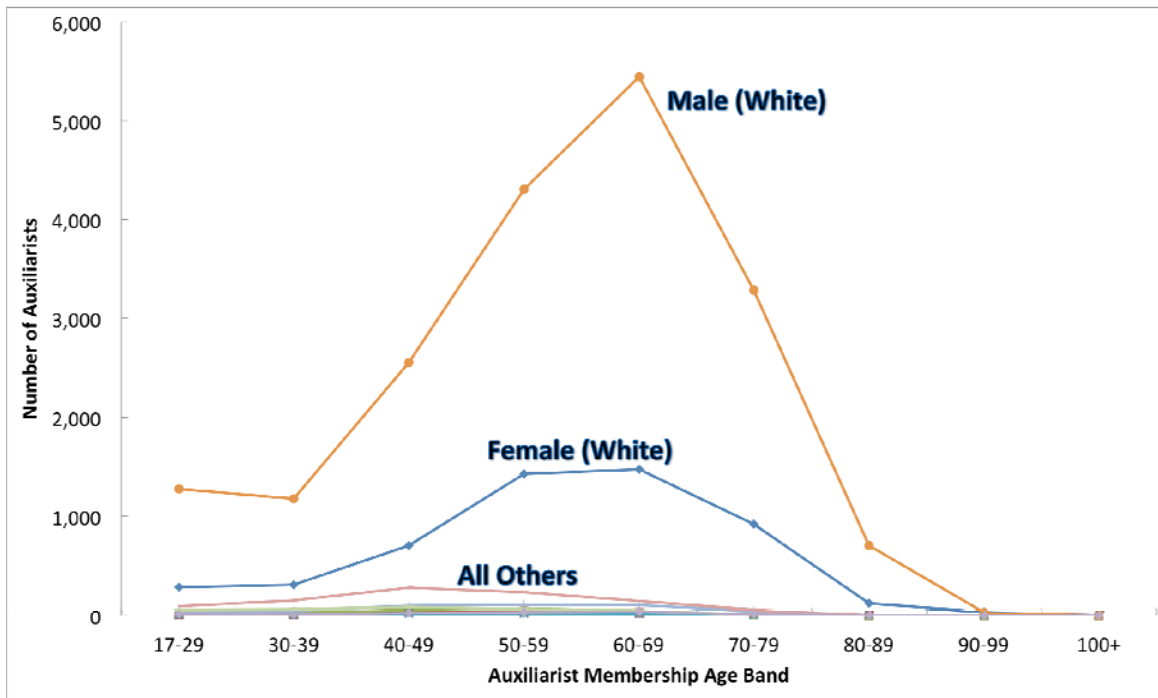
Note: Auxiliary member demographic information is self-identified and self-reported in AUXDATA. At the time of this data-gather, 16.5% of Auxiliarists chose to not self-associate with one of the five race/ethnicity options listed in the AUXDATA database; they are not represented. This chart represents the 83.5% of Auxiliary membership who chose to self-identify and self-report.

Figure 14.   "Snapshot" of Auxiliary Demographics—December 2011[88]

In order to display the representation of the other eight groups to a level that facilitates discussion, the same data that is represented in Figure 14 is represented identically in Figure 15, only the member scale incrementation on the left is reduced from

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[88] AUXINFO Online Database, "Member Report," December 17, 2011.

1,000 people to 50 people. In essence, Figure 15 is "Zoomed-in" to show minority representation in the Auxiliary. The top full-length line in Figure 15 represents "Male (Hispanic)."

Please note between the two Figures: "Male (White)" representation in the Auxiliary is greatest in the 60–69 age band while "Male (Hispanic)" peaks in the 40–49 age band. The largest group of White men, approximately 5,400, are in their 60s, while the largest group of Hispanic men, approximately 275, are in their 40s—a generation their junior. This will be discussed next.
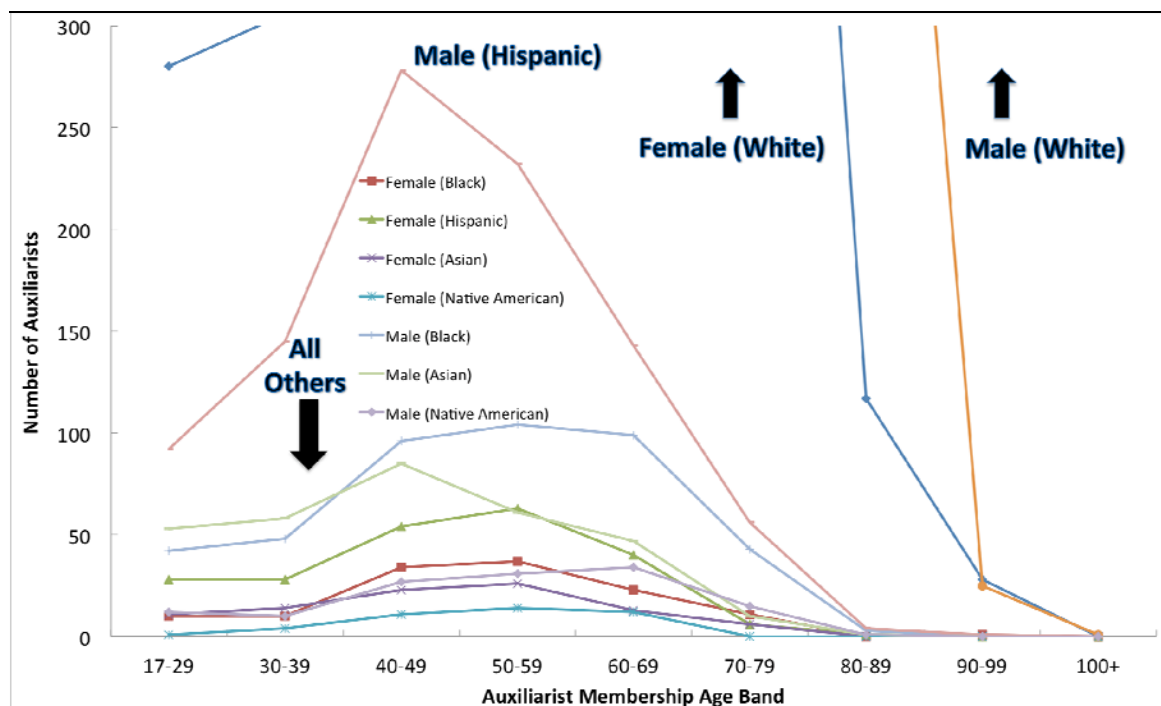
Note: The above represents the same data as Figure 14, but is "zoomed-in" to make minority representation discernable.

Figure 15.   "Snapshot" of Auxiliary Demographics—December 2011 (Zoomed-In)

- Finding #8. The membership of the Auxiliary is primarily older and White.

2. The Future?

The population of the U.S. is ever growing. Different ethnic and racial groups have varying growth rates, based on factors to include culture, education, health care access, mortality, and emigration. Researchers at Rice University conducted a study of U.S. population growth rates and projected population growth within several primary groups, shown in Figure 16.

Numeric Change in the Projected U.S. Population by Race and Hispanic Origin: 2000 to 2050 (in millions)

Category	Value
Non-Hispanic White alone	7.6
Non-Hispanic Black alone	17.5
Non-Hispanic Asian alone	23.0
Non-Hispanic all other races	11.6
Hispanic (any race)	97.2
Total	156.9

Source: U.S. Census Bureau, 2008 National Projections
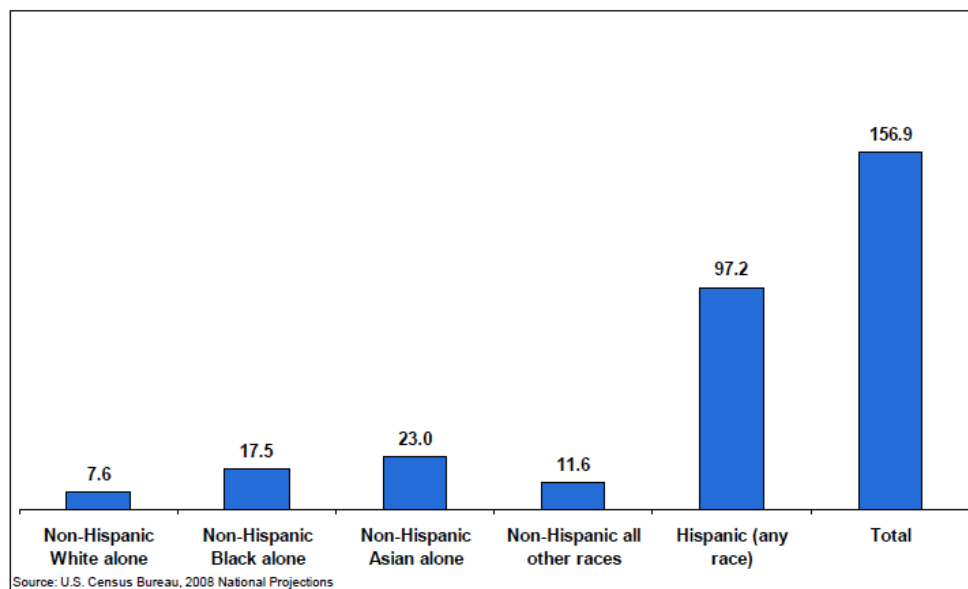
Note: The above is a reprint of a slide created by Steve H. Murdock, and Allyn and Gladys Cline.

Figure 16.   Projected 2000–2050 U.S. Population Increase (Numerical), by Race and Hispanic Origin.[89]

Between 2000 and 2050, the Hispanic population in the U.S. is projected to grow several orders of magnitude faster than the other main ethnicities. The majority of the increase in the U.S. population will be within the Hispanic community. Figure 17

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[89] Steve H. Murdock, "Population Growth and Diversification in Rural and Urban America: Implications for Health, Education, The Labor Force And Economic Development," PowerPoint Presentation, Presented to Recreational Boating Stakeholders Growth Summit, Chicago, IL, December 14, 2011, Slide 55/90.

represents the same population growth information as Figure 16; only Figure 17 shows the overall percentage that each group is projected to contribute to the overall population growth. An estimated 62% of the population growth between 2000 and 2050 will be of Hispanic Ethnicity.

Projected Change in the U.S. Population by Race and Hispanic Origin: 2000 to 2050

- Non-Hispanic White alone 5%
- Non-Hispanic Black alone 11%
- Non-Hispanic Asian alone 15%
- Non-Hispanic Other 7%
- Hispanic 62%

Source: U.S. Census Bureau, 2008 National Projections
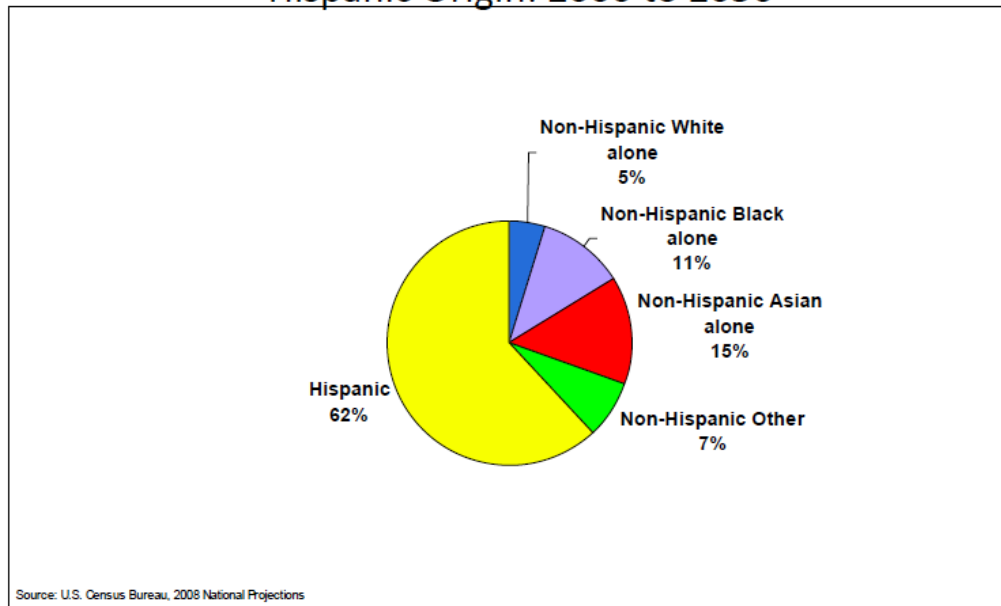
Note: The above is a reprint of a slide created by Steve H. Murdock.

Figure 17.   Projected 2000–2050 U.S. Population Increase (Percentage), by Race and Hispanic Origin.[90]

Figures 16 and 17 represent population *growth* by race/ethnicity, the next Figure represents overall *total population representation* by race/ethnicity. As depicted in Figure 18, Whites represented approximately 85% of the American population in 1960. It is projected that Non-Hispanic Whites will represent less than half of the population by 2050, with Hispanics rapidly becoming the largest minority.

As previously presented, the median age of Hispanics in the Auxiliary is approximately a generation younger than Non-Hispanic Whites. This could be indicative

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[90] Murdock, "Population Growth and Diversification in Rural And Urban America: Implications For Health, Education, The Labor Force And Economic Development," Slide 56/90.

of growing prosperity in this group—prosperity that grows from generation to generation. The Coast Guard and the Auxiliary would do well to research and understand the cultural nuances of the American Hispanic community, because it is projected to become a major element of the future demographic of the Nation—America's future volunteers.

Population by Race and Ethnicity, Actual and Projected: 1960, 2005 and 2050
(% of total)

Note: All races modified and not Hispanic (*); American Indian/Alaskan Native not shown. See "Methodology." Projections for 2050 indicated by light blue bars.
Source: Pew Research Center, 2008.
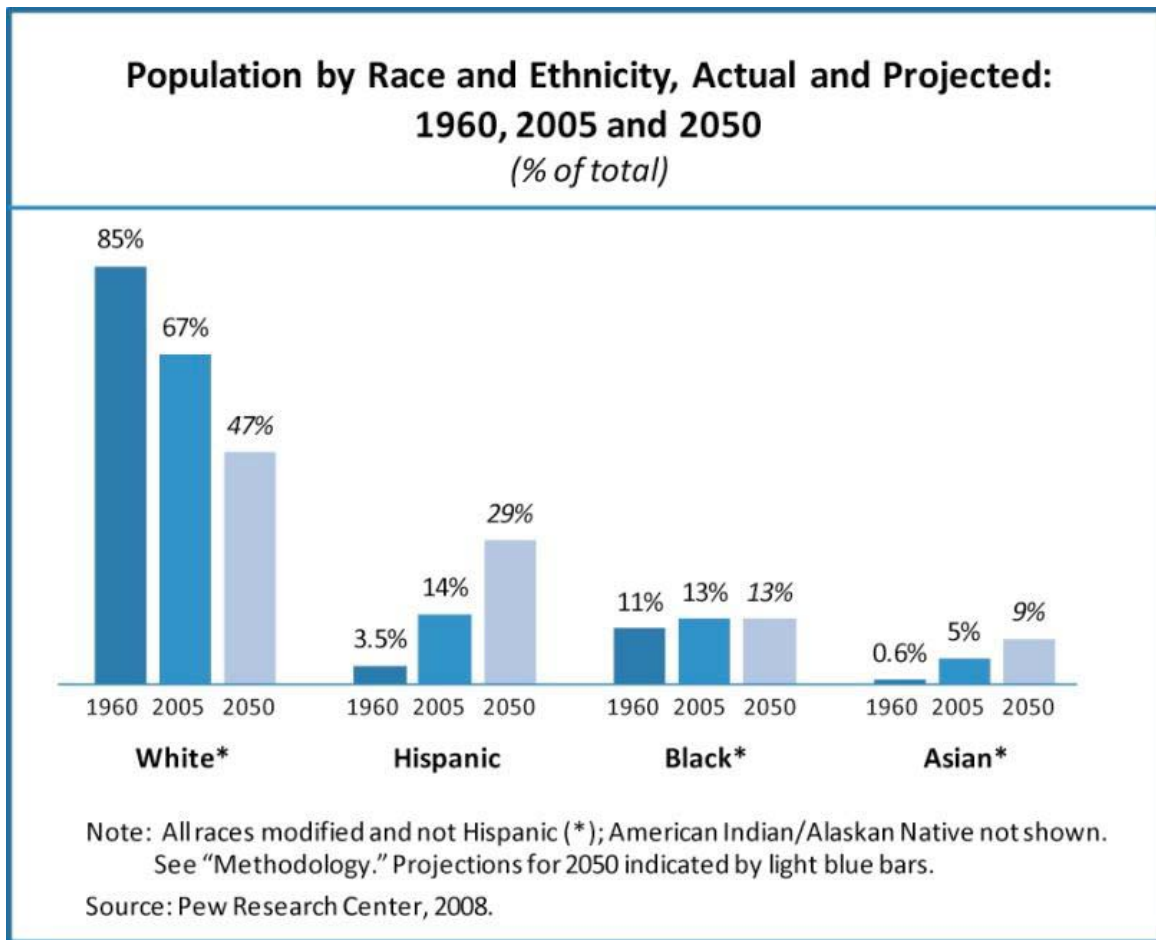
Note: The above is a reprint of a Federal Emergency Management Agency (FEMA) Figure.

Figure 18.   Population by Race and Ethnicity, Actual, and Projected: 1960, 2005, and 2050[91]

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[91] Federal Emergency Management Agency, "Crisis Response and Disaster Resilience 2030: Forging Strategic Action in an Age of Uncertainty," Report, 7, Figure 2, January 2012, http://www.fema.gov/library/viewRecord.do?id=4995.

- Finding #9. The American White population representation is decreasing while the three largest American non-White minorities are growing. The American Hispanic population representation, which is already the largest minority represented in the Auxiliary, is growing rapidly.

C. COAST GUARD RESOURCING OF THE AUXILIARY PROGRAM

The term "resourcing" is common in Coast Guard program management parlance and includes both funds (dollars) spent by the Coast Guard in direct support of a program as well as the level of effort required by the full-time employed (FTE) program managers and workers. Since the Coast Guard pays the salaries of the FTE, their level of effort (time) expended in support of a task or sub-program can be studied and equated to organizational dollars spent. Including the salaries of FTE, the Coast Guard presently devotes approximately $17.4M toward the Auxiliary program (approximately $9.5M in direct program funding and approximately $8M in the form of FTE salaries for 74 people). The resources devoted to the studied programs only comprise a portion— roughly half—of that funding, with some devoted to other programs and much devoted to general Auxiliary programmatic administrative overhead. All of the Auxiliary program's direct "resourcing" has been studied herein. Some assumptions were made and are articulated in Chapter III and in Appendix A. Those assumptions generally result in a slight over-estimation of "General Auxiliary Membership Admin" expenses. The assumptions have minimal affect on the relative expense of the programs to each other and therefore adequately support the goal of this study.

The resourcing of the Auxiliary during the most recent year, fiscal year 2011, was studied in detail. The trend of budgetary fiscal year funding (dollars) is also presented to offer some perspective regarding recent funding trends. This funding data was only available because Mr. Steve Minutolo, the Auxiliary program office (CG-BSX-1) Administration Branch Chief at Coast Guard Headquarters, personally maintained these records during his tenure in his position. The Coast Guard does not otherwise retain these records to the level necessary for this study. Unfortunately, there is no history regarding the Auxiliary program FTE. For clarification, the acronym "DIRAUX" as depicted in this resourcing discussion refers to the full time Coast Guard employees who work in the 14

regional Director of Auxiliary offices throughout the country. These FTE directly manage the regional Auxiliary operations, and therefore have direct involvement in the studied sub-programs. Historical records of these FTE staffing levels are not available and are not discussed.

1. FY 2011 Resourcing

a. FY 2011 Direct Funding

The FY 2011 direct funding of the Auxiliary program is depicted in Table 2. The major funding elements are organized across the top, with the total element amount immediately below, and the corresponding expenditure within each sub-program listed further below. The seven people working within the Auxiliary program management office at Coast Guard Headquarters (CG-BSX-1) are included as funding elements versus program management staffing because they are treated differently than the personnel in the field. Headquarters personnel are not considered to be critical to the organization and direction of the Auxiliary by Coast Guard leadership; CG-BSX-1 positions are regularly left vacant, assigned to individuals junior to the position descriptions, and the staff has been systematically reduced over recent years, much like funding elements. The Coast Guard has numerous funding accounts. The funding types in Table 2 all have different funding accounts and most have different funding managers, further adding to the complexity of data collection and usage identification.

FY11 Auxiliary Operational Program Financial Support										
	CG District DIRAUX Office Funding[1]	CGHQ Office Funding[2] (CG-5421)	Personnel Protective Equipment	Patrol Expenses (Fuel)	Standard Auxiliary Maintenance Allowance (SAMA)	Damage Claims	C-School Training	Standard Personnel Costs (7 people @ CGHQ)[2]		Total
Total Funding	$2,700,000	$1,100,000	$1,173,000	$2,900,000	$ 500,000	$ 100,000	$ 945,000	$ 870,000		$ 10,288,000
General Aux Membership Admin	$2,700,000	$1,100,000	$ -	$ -	$ -	$ -	$ 567,000	$ 870,000		$ 5,237,000
Surface Operations (boat-related)	$ -	$ -	$1,078,000	$1,400,000	$ 500,000	$ 25,000	$ -	$ -		$ 3,003,000
Air Operations (aircraft-related)	$ -	$ -	$ 95,000	$1,500,000	$ -	$ 75,000	$ 96,000	$ -		$ 1,766,000
Vessel Safety Check Program	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -		$ -
Public Education	$ -	$ -	$ -	$ -	$ -	$ -	$ 136,000	$ -		$ 136,000
Marine Safety	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -		$ -
CG Unit Support (non-MSO)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -		$ -
Other Programs….	$ -	$ -	$ -	$ -	$ -	$ -	$ 146,000	$ -		$ 146,000

Note 1: As described in Chapter III, accounting of DIRAUX Office funding of Operational Programs was not included due to the complexity of gathering the data. The funds are assumed to be 100% attributed to general Auxiliary membership Administration.

Note 2: The funding and personnel costs of the Auxiliary Program Office at Coast Guard Headquarters (CG-5421, recently renamed CG-BSX-1) is assumed to be programmatic overhead 100% attributed to general Auxiliary membership Administration.

Note 3: The Coast Guard is unable to identify how much of the Patrol Expenses (Fuel) is attributed to each program. Until FY 2011, Aviation SAMA was reimbursed from the Coast Guard Fuel account at the annual rate of approximately $1M. The Patrol Expenses (Fuel) breakdown above is an empirical estimate.

Table 2.   FY 2011 Direct CG Funding of Auxiliary Operational Programs

b.   *FY 2011 Auxiliary Program Management Staffing*

Table 3 depicts the office and military rank or government civilian pay grade in which each of the 74 FTE worked during FY 2011. For example, D1NR (Coast Guard District One, Northern Region) is comprised of four people, an O5 Diraux (senior person), a CWO OTO (Chief Warrant Officer—Operational Training Officer), a GS-7 civilian employee, and a YN2 (Second Class Yeoman).

	O5/O4 Diraux	CWO/CPO OTO	GS-14	GS-13	GS-12	GS-11	GS-9	GS-7	GS-6	E-6/YN1	E-5/YN2	E-4/YN3	E-6/SK1	E-5/SK2		Diraux Staff
D1NR	1	1						1			1					4
D1SR	1	1						1			1		1			5
D5NR	1	1					1					1		1		5
D5SR	1	1					1				1			1		5
D7	1	1						2			1			1		6
D8ER	1	1						1						1		4
D8WR	1	1					1	1								4
D8CR	1	1					1	1								4
D9	1	3			1			2								7
D11NR	1	1					1				1	1				5
D11SR	1	1					1				1			1		5
D13	1	1					1		1				1			5
D14	1	1				1				1						4
D17	1	1					1	1								4
CGHQ	2	1	1	2						1						7
Total #	14	16			1	1	8	10	1	1	6	2	2	5	0	74

Table 3.   FY 2011 Auxiliary Program Management Staff

The Coast Guard Headquarters Auxiliary program management office performed a work-study that was used for this analysis. Each of the 14 regional Director of Auxiliary offices was asked to identify the percentage of each employee's work time devoted to each of eight categories; these included the six studied operational sub-programs, general Auxiliary membership administration, and all other tasks. The employee responses were organized into three groups: Directors of Auxiliary (DIRAUX) - the senior person in each office; the Operational Training Officers (OTO) within each office; and the rest of the staffs. All government employees have a specific cost to the Coast Guard attributed to them. This is referred to as a "standard personnel cost." The overall standard personnel cost for each of the 67 regional DIRAUX office personnel was identified (Reminder: the seven personnel at Coast Guard Headquarters are considered overhead), and the corresponding "cost" of their time (to the Coast Guard), based on the percentage attributed to each category, was calculated and summarized in Table 4.

DIRAUX Office Personnel Resource Breakdown							
(% of time devoted to each program - equated to CG cost)							
General Duties	DIRAUX	Cost to CG	OTO	Cost to CG	Staff	Cost to CG	Total Cost to CG
Overall Personnel / Salary Cost	14 people	$2,284,596	16 people	$1,879,268	38 people	$2,986,767	$7,150,631
Aux Membership Admin	47.5%	$1,082,676	27.4%	$521,053	81.2%	$2,427,071	$4,030,799
Surface Operations (boat-related)	14.4%	$329,000	42.9%	$802,943	5.8%	$171,489	$1,303,432
Air Operations (aircraft-related)	8.8%	$200,176	6.8%	$143,328	3.6%	$108,685	$452,189
Vessel Safety Check Program	0.9%	$21,153	3.4%	$57,914	0.1%	$2,329	$81,396
Public Education	2.4%	$54,373	1.9%	$29,788	0.1%	$2,329	$86,491
Marine Safety	1.8%	$40,684	4.2%	$65,262	0.2%	$6,132	$112,078
CG Unit Support (non-MSO)	8.4%	$191,879	5.9%	$111,669	1.0%	$29,282	$332,829
Everything else….	15.9%	$364,656	7.5%	$147,310	8.1%	$239,450	$751,417

Table 4.   Salary Expense of Time Expended Managing Auxiliary Programs by Coast Guard Full-Time Employees[92]

c.   Overall FY 2011 Auxiliary Operational Sub-program Resourcing

Figure 19 displays in pie-chart format the corresponding portion of total resourcing (funding plus staffing, Table 2 plus Table 4) devoted to each operational program in fiscal year 2011.

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[92] Result of a survey completed by each of the 14 Directors of Auxiliary and forwarded to the Auxiliary Program Manager, Commander Michael D. Barner. The surveys were completed February 2–9, 2012. The results were compiled into "Assessment of Regional Directors of Auxiliary Workload" Excel spreadsheet on February 11, 2012.

Coast Guard Expenditures within the Auxiliary Program FY 2011

CG Unit Support (non-MSO) 1.9%
Public Education 1.3%
Marine Safety 0.6%
Everything else.... 5.1%
Vessel Safety Check Program 0.5%
Air Operations (aircraft-related) 12.7%
Aux Membership Admin 53.1%
Surface Operations (boat-related) 24.7%
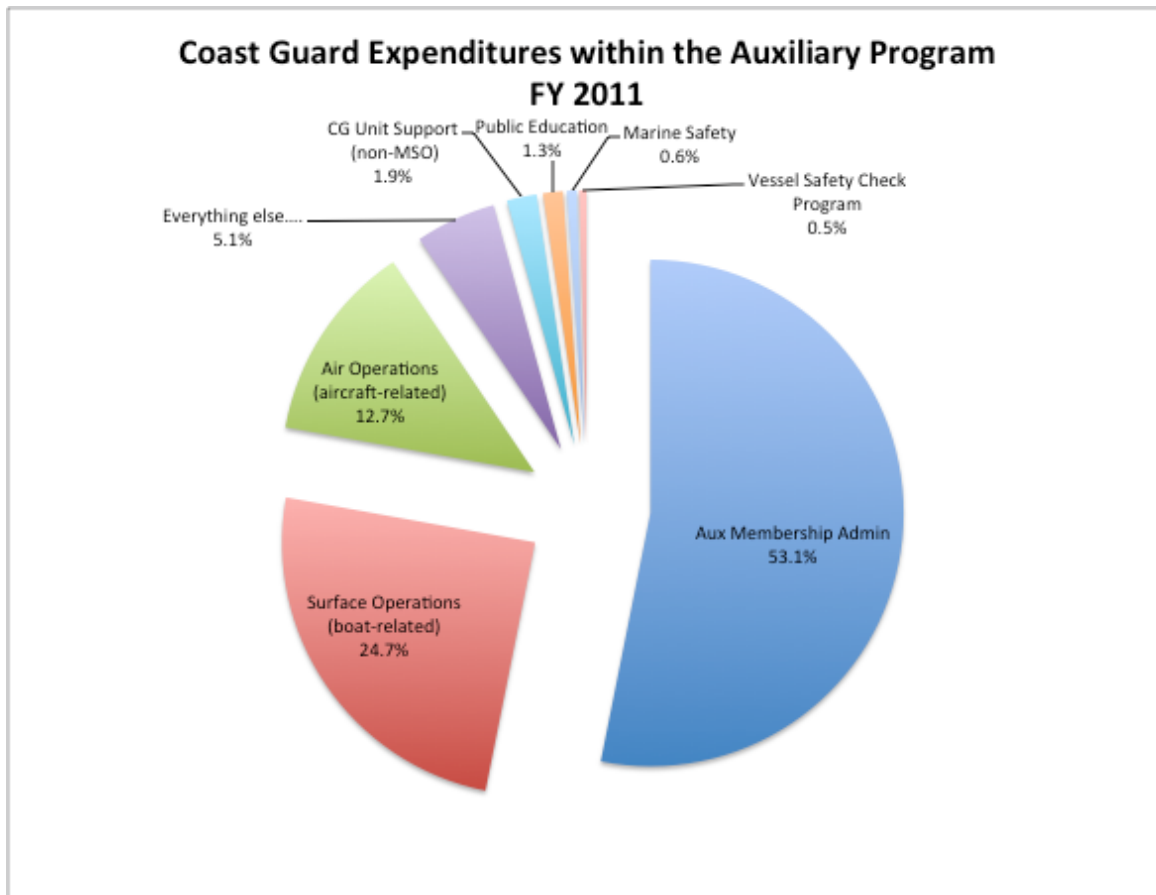
Note: The above resourcing breakdown reflects all direct Auxiliary program resourcing during FY 2011—both programmatic funding and the cost equivalence of full-time Coast Guard staff tasked with managing the Auxiliary program.

Figure 19.   2011 Direct Coast Guard Expenditures within the Auxiliary Program

- <u>Finding #10</u>. Auxiliary membership administration, the overhead expense for managing the organization, consumes approximately half of the direct resourcing of the Auxiliary program.

2.   Auxiliary Program Historic Funding

Auxiliary program funding data for fiscal years 2001 to 2011 were preserved locally by CG-BSX-1, and is presented in Table 5. At the bottom of Table 5, the direct Auxiliary program's annual funding is inflation-normalized to 2011 dollars for relative comparison.

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Auxiliary District Budget Model	$ 1,231,276	$ 1,469,322	$ 2,869,661	$ 2,847,702	$ 2,729,008	$ 2,758,801	$ 2,758,801	$ 2,595,122	$ 2,581,789	$ 2,734,611	$ 2,762,234
CGHQ Program Office (CG-5421)	$ 1,243,830	$ 1,177,924	$ 2,459,633	$ 2,240,207	$ 1,700,970	$ 1,042,883	$ 1,077,382	$ 1,077,382	$ 1,077,382	$ 1,077,382	$ 1,077,382
PPE (from CG-741)[1]				$ 1,742,366	$ 876,312	$ 1,077,756	$ 1,100,942	$ 1,029,828	$ 1,037,947	$ 1,093,812	$ 1,223,297
Fuel (CG-8)[2]	$ 2,900,000	$ 2,900,000	$ 2,900,000	$ 2,900,000	$ 2,900,000	$ 2,900,000	$ 2,900,000	$ 2,900,000	$ 2,900,000	$ 2,900,000	$ 2,900,000
SAMA (Surface)						$ 500,000	$ 500,000	$ 500,000	$ 500,000	$ 500,000	$ 500,000
Claims (CG-0945)[2]	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000
C-Schools (AFC-56)[2]	$ 1,000,000	$ 1,000,000	$ 1,000,000	$ 1,000,000	$ 1,000,000	$ 1,000,000	$ 1,000,000	$ 1,000,000	$ 1,000,000	$ 1,000,000	$ 1,000,000
Unadjusted Total	$ 6,475,106	$ 6,647,246	$ 9,329,294	$ 10,830,275	$ 9,306,290	$ 9,379,440	$ 9,437,125	$ 9,202,332	$ 9,197,118	$ 9,405,805	$ 9,562,913
Inflation Adjustment to 2011 Dollars	27.1%	25.0%	22.2%	19.1%	15.2%	11.6%	8.5%	4.5%	4.8%	3.2%	
Total Adjusted to 2011 dollars	$ 8,229,860	$ 8,309,058	$ 11,400,397	$ 12,898,858	$ 10,720,846	$ 10,467,455	$ 10,239,281	$ 9,616,437	$ 9,638,580	$ 9,706,791	$ 9,562,913

Note 1: Funding specifically allocated for Personal Protective Equipment (PPE) was not provided prior to FY 2004.

Note 2: Historic data on three expenditure elements was not available. Those elements were assumed to be constant 2001–2011, using the budgeted FY 2012 amounts:
- a) Fuel reimbursements ($2.9M budgeted in 2012)
- b) Damage claims ($100K budgeted in 2012)
- c) "C-school" training allocations ($1.0M budgeted in 2012)

Table 5.   Direct Coast Guard Funding of Auxiliary Program (Does Not Include Regional Management Personnel Costs)[93],[94]

The Auxiliary program received a considerable increase of just over $2.5M in FY 2003, essentially doubling the programmatic funding of the regional Director of Auxiliary offices and the headquarters program management operations. The regional funding increase was sustained while the headquarters funding was then dropped below the 2001 funding level in following years. Additionally, the Coast Guard began funding the purchase and issuance of personal protective equipment (PPE) for Auxiliarists in 2003. With this PPE funding, the Auxiliary program purchases life jackets, dry suits, Personal Emergency Position Indicating Radio Beacons (PPIRBS), and other safety-related equipment for Auxiliarists who perform in waterborne and airborne operations.

Figure 20 represents the same data presented in Table 5. Note that the trend line, which indicates the average annual change in funding, shows the inflation-normalized program funding to be essentially static over the past 10 years.

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[93] Mark A. Unpingco, e-mail message to author, "Aux Program Funding History," January 13, 2012.

[94] U.S. Inflation Calculator, (n.d.), http://www.usinflationcalculator.com/.
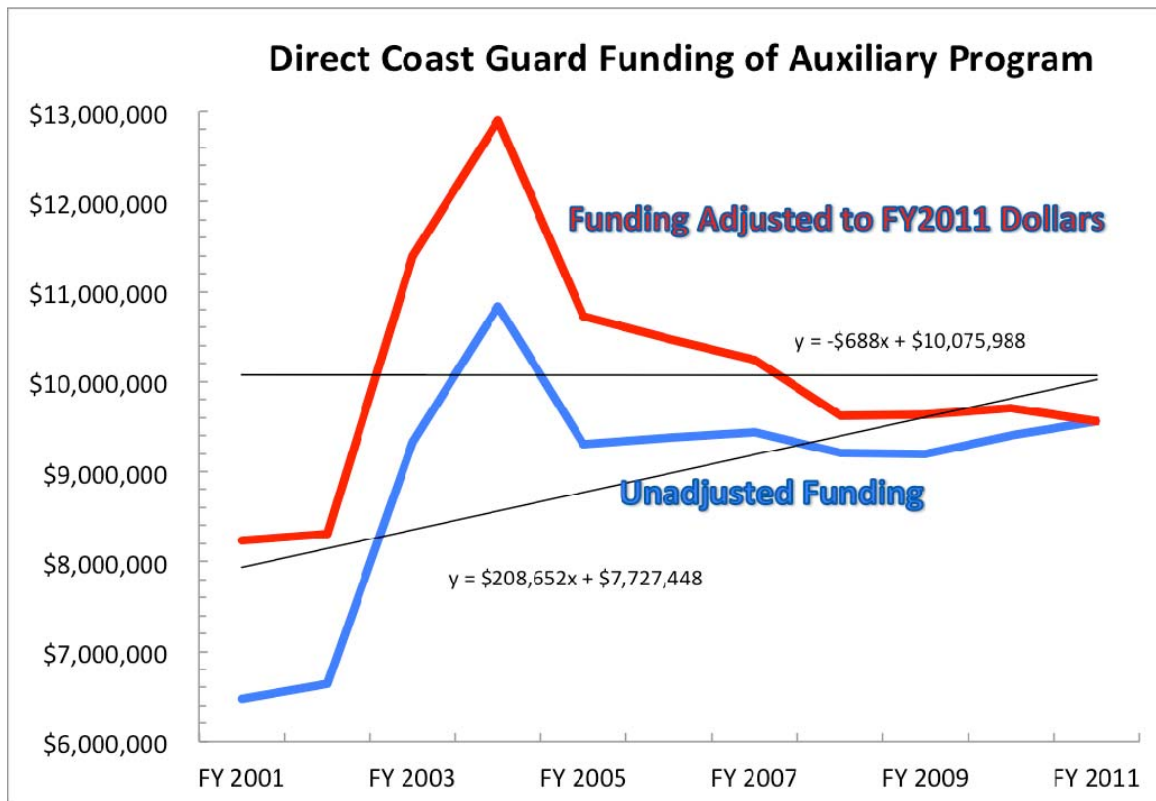
Direct Coast Guard Funding of Auxiliary Program

Funding Adjusted to FY2011 Dollars

$y = -\$688x + \$10,075,988$

Unadjusted Funding

$y = \$208,652x + \$7,727,448$

Note: The associated trend lines are a linear representation of the "curve." The number associated with "x" represents the slope, or the average programmatic funding change from year to year between FY 2001 and FY 2011.

Figure 20.   2001–2011 Direct Coast Guard Funding of Auxiliary Program (Table 5 Data)

Similar to the data search for historical records regarding Auxiliary membership, activity, and funding, the records regarding the programmatic staffing by full-time Coast Guard employees was attempted, but is unavailable. Additionally, at the time of this writing (spring 2012), the Coast Guard is seeking to identify full-time positions, both military and civilian, to eliminate; the data presented herein could possibly be used to identify positions to eliminate—the *opposite* of the goal of this study. The Auxiliary program office forwarded a white paper to Coast Guard Leadership in spring 2011.[95] In that paper, the workload of each of the 14 regional offices was measured and compared to

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[95] Michael D. Barner, Internal Coast Guard Headquarters White Paper, "USCG Regional Director of Auxiliary Office Staffing Study," March 2, 2011.

one another. The Auxiliary program office was seeking permission to reallocate resources within the Auxiliary program from several regional offices to others with disproportionately heavy workloads.

No regional historic data regarding staffing is available. Of the 74 full-time Coast Guard employees who manage the Auxiliary program, seven are assigned to Coast Guard Headquarters and 67 work at 14 regional offices. Conversations with long-served Auxiliarists indicate that virtually all regional Director of Auxiliary staffs were significantly larger prior to several rounds of Coast Guard personnel cuts starting in the mid-1990s. Anecdotally, it is reported that the program management staffing for the Auxiliary program used to be twice the level it is today, but that cannot be confirmed. A recent example can be provided with certainty; the Coast Guard Headquarters Auxiliary Program Management staff (CG-BSX-1) previously included an additional Coast Guard Commander and Coast Guard Lieutenant. The Lieutenant position was ordered eliminated in 2006, and the Commander position was ordered eliminated in 2012.[96] The Coast Guard Headquarters staff is now about 25% smaller than it was just six years ago.

The Coast Guard grew significantly after the attacks of September 11, 2001.[97] However, of the 3,250 military and civilian positions added between 2001 and 2003 (an organizational expansion of almost 10%), exactly zero of them were added to the Auxiliary program management staff, despite a considerable expansion of the Auxiliary membership during that period.[98] Now, as the Coast Guard is seeking to shrink the size of its civilian and military force, to match reduced federal budgets, some Auxiliary program management positions are being identified for possible elimination.

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[96] First-hand observations of the Coast Guard Auxiliary Program manager, Commander Michael Barner.

[97] See Figure 1.

[98] Steven J. Minutolo (CG-BSX-1 Chief of Administration Branch), in discussion with the author, April 20, 2012.

While historic full-time Auxiliary program management staffing is not available, and therefore cannot be used to present Coast Guard resourcing trends, it is evident (but unsupportable) that Auxiliary program management personnel resources are significantly less than 30 years ago.

- Finding #11. The direct funding of the Auxiliary program, when adjusted for inflation, has progressively decreased since an infusion immediately following 9/11.

D. SUMMARY OF FY 2011 AUXILIARY PROGRAM RETURN ON INVESTMENT

This may be viewed as the "bottom-line" or ultimate point of this study. Table 6 compiles all of the data related to Auxiliarist participation and Coast Guard resource expenditures in FY 2011, relative to the six operational activities being studied. This Table could be independently used as the primary take-away of this effort. It represents the number of Auxiliarists who recorded activity in each sub-program and the overall number of hours they provided this service (the overall relative percentage of membership/activity is in parentheses). The table presents the relative Coast Guard resourcing devoted to each activity, in direct funding and full-time equivalent (FTE) employee value. Next, the table includes the measurable outcomes specific to each activity. In addition to reporting the time spent performing a task, the AUXDATA program allows the documentation of any lives or property directly saved. While members of the Auxiliary occasionally directly save lives and property, a common assessment of the result of their work is to correlate the volunteer effort to an equivalent number of Coast Guard members/employees it would require to perform the same task. The Marine Safety and Coast Guard Unit Support sub-programs have no distinct or specific outcome but they perform duties parallel and in collaboration with Coast Guard units. Therefore, outcome measurement of these two sub-programs uses the empirical and general estimation that every 2,000 volunteer-hours logged is equivalent to one Coast Guard full-time employee.

To the right side of the table, Auxiliarist participation, Coast Guard resource expenditures, and measurable outcomes, are used to calculate two very different—and

unrelated—return on investment (ROI) calculations—each activity's volunteer participation relative to the Coast Guard resources expended, and the actual mission outcomes resulting from that same resource expenditure.

"Mission Outcome Return on Investment" represents the resources expended by the Coast Guard directly on each sub-program to deliver a per-outcome return. To use the first example in Table 6, each Vessel Safety Check (VSC) performed by the Auxiliary costs the Coast Guard $0.63. This return on investment is irrespective of the number of people involved, their effort, and the number of volunteer-hours that may have been dedicated to that activity.

Conversely, "Volunteer Involvement Return on Investment" represents the more commonly used standard of volunteer effort, "volunteer-time value" per organizational dollar expended. Continuing with the first example in Table 6, for every $1.00 spent by the Coast Guard to support the Vessel Examination sub-program, the volunteers provide $24.60 in Vessel Examination *effort*. This return on investment is irrespective of outcomes and assigns a "value" merely to volunteer participation in an activity.

The "value" of volunteer involvement or effort is often correlated to an equivalent cost to have a paid employee perform similar duties throughout a similar duration. While some volunteer activities require the employment of unskilled and lesser-paid labor, other volunteer activities require advanced skills and credentials; some volunteers provide phone call reminders and stuff envelopes, while others provide tax preparation or legal advice. Independent Sector is a national organization that specializes in studying volunteerism. Independent Sector's current and nationally accepted estimate of the value of a volunteer-hour in the U.S. is $21.36. It is a generalized national hourly volunteer "value" (not necessarily cost-avoidance) and can be attributed to the volunteer effort (not results) in an activity.[99] In the absence of other information, this would be the appropriate rate to use in calculating a "value" for Auxiliarist participation and effort. However, the Coast Guard has determined, for the purposes of benefits under the Federal Employee's

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[99] Independent Sector, "Independent Sector Announces New Estimate for Value of Volunteer Time," March 17, 2011, http://www.independentsector.org/is_announces_value_of_volunteer_time_031711. This represents the 2010 value. This is the most recent value available at the time of this writing.

Compensation Act, that Auxiliarist "…compensation is based upon a percentage of the base pay for grade GS-9 (Step 1) [federal employee] of the General Schedule in effect on the date…" of an event subject to compensation from the Government.[100] The 2011 hourly base pay equivalent for a GS-9 (Step 1) government employee was $19.92.[101] Because this analysis is intended for a Coast Guard audience and organizational consideration <u>within</u> the Coast Guard, the GS-9 (Step 1) rate of $19.92 per hour is used versus the otherwise nationally accepted rate of $21.36.

The collected data is presented in a matrix format to facilitate analysis and comparison, shown in Table 6.

Activity	FY 2011Volunteer Interest & Support			FY 2011 AUX Program Resourcing Requirements			FY 2011 Outcomes				FY 2011 Return on Investment	
	# Aux engaged (% of Aux Membership)	Hours Served (% of total Aux Hours)	Volunteer-Hour Contribution (Hours X Hourly "Value")	Direct funding ($)	FTE ($)	Total ($)	Vessels Examined	Classes Taught	Equivalent CG FTE Offset (2,000 hrs = 1 FTE)	Property/Lives Directly Saved and Missions performed	Mission Outcome Return (AUX Program-$/Result)	Volunteer Involvement Return (Volunteer Contribution-$ / AUX Program-$)
			Hourly Value = $19.92 (GS-9, Step 1) A	See Table 5	See Table 4	B	C1	C2	C3	C4, C5, C6	"Mission Dollar value" Returned per CG Dollar Spent B/C	"Volunteer Dollar Value" Returned per CG Dollar Spent A/B
Vessel Examination	6,576 (21.9%)	100,525 (2.1%)	$ 2,002,458	$ -	$ 81,396	$ 81,396	129,655				$0.63 per VSC	$ 24.60
Public Education	6,231 (20.8%)	115,066 (2.4%)	$ 2,292,115	$ 136,000	$ 86,491	$ 222,491		15,039			$14.79 per Class	$ 10.30
Marine Safety	2,056 (6.9%)	105,986 (2.2%)	$ 2,111,241	$ -	$ 112,078	$ 112,078			53.0		$2,114.68 per FTE	$ 18.84
CG Unit Support	2,692 (9.0%)	249,906 (5.1%)	$ 4,978,128	$ -	$ 332,829	$ 332,829			125.0		$2,662.63 per FTE	$ 14.96
Surface Ops Support	9,606 (32.0%)	473,779 (9.7%)	$ 9,437,678	$ 3,003,000	$ 1,303,432	$ 4,306,432				$18.28M property 322 lives saved 40,604 missions	$0.24 per $1 property $13,374 per life saved $106.06 per mission	$ 2.19
Air Ops Support	666 (2.2%)	52,382 (1.1%)	$ 1,043,449	$ 1,766,000	$ 452,189	$ 2,218,189				$0.25M property 0 lives saved 9,783 missions	$12.87 per $1 property N/A $329.97 per mission	$ 0.47

-The **green** blocks represent quantitative data gathered from the AUXINFO database.

-The blue blocks represent Coast Guard Expenditures obtained from CG-BSX-1.

Note 1: The Missions reported in this table represent facility-missions, not member-missions, as reported in Figure 7. A boat that performs a mission with two Auxiliarists on board is represented as one mission in Table 6, whereas it reflects two member-missions in Figure 7.

Table 6.   Primary Operational Activities—Return on Investment

The return on investment information calculated in Table 6 directly answers one of the three research sub questions, "What Return on Investment do the Auxiliary sub-programs offer the Coast Guard?" The programmatic ROIs also assist in answering the

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[100] U.S. Coast Guard Auxiliary Manual, 5–62.

[101] U.S. Office of Personnel Management, "Salaries and Wages, Salary Table 2011-GS," (n.d.), http://www.opm.gov/oca/11tables/html/gs_h.asp.

other two research sub questions regarding in which areas the Coast Guard could best leverage the Auxiliary, and where to adjust existing programmatic resources to maximize the Auxiliary's effectiveness.

- <u>Finding #12</u>. Auxiliary operational activities—with the exception of Air Operations Support—offer significant measured outcomes at minimal per unit expense to the Coast Guard, and have a positive volunteer involvement return on investment.

- <u>Finding #13</u>. Air Operations Support has limited measured outcomes and a negative volunteer involvement return on investment, yet consumes 12.7% of Auxiliary programmatic resourcing.

1. Overall Auxiliary Program Return on Investment

One could attempt to assess the entire Auxiliary program's return on investment in terms of mission outcome and volunteer involvement, but that would require several overarching key and potentially misleading assumptions, and is beyond the scope of this study. However, in the spirit of a complete review, the same two return on investment calculations, as applied to individual sub-programs, could be applied to the overall Auxiliary program, and are discussed below.

The Auxiliary's operationally supporting activities have diverse outcomes. The most expedient method to consider the combined outcome of the entire program is to first assume that all Auxiliary operational activities are necessary, and if not performed by an Auxiliarist they would necessarily be performed by a Coast Guard military or civilian employee to the same degree; in reality, this is not the case. Secondly, one would have to assume that the Coast Guard military or civilian employee who would perform this task would match the duration and pace of activity performed by Auxiliarists. Thirdly, Auxiliarists serve part-time as they are able; the same assumption as made for studying two of the sub-programs would have to be made to correlate Auxiliarist activity to an equivalent Coast Guard full time equivalent employee (FTE). For this effort, the author chose a correlation of 2,000 Auxiliarist volunteer-hours equate to one FTE. Using this logic and following these assumptions, the 1,222,047 operationally focused volunteer hours reported in Table 1 equate to 611 FTE. **Using the overall Coast Guard Auxiliary program funding of $17.4M, the Auxiliary program delivers an overall <u>outcome</u>**

return on investment to the Coast Guard at a cost of $28,477 per FTE. That cost per FTE is significantly greater than the costs specifically calculated for the Marine Safety and CG Unit Support sub-programs because the costs represented in Table 6 only consider the resourcing specifically directed to those activities; the 53.1% of the Auxiliary programmatic funding attributed to Auxiliary membership Administration (programmatic overhead), shown in Figure 19, was not included in the assessment of the sub-programs because the intent is to compare the sub-programs to one another.

Previous studies presented the overall cost of the Auxiliary Program ($17.4M in FY 2011) and the total number of Auxiliarist volunteer-hours (4,861,156 reported in Table 1) to calculate a general Auxiliary ROI, using a per-hour volunteer "value." **Using the discussed GS-9 (Step-1) rate, the FY 2011 Volunteer <u>involvement</u> return on investment is $5.58 in "value" for every $1.00 spent by the Coast Guard.** That value has no specific meaning because it includes any and all hours logged as value-added, even those hours spent participating in a recreational event. However, if Coast Guard leadership looks upon the Auxiliary as primarily an affiliation organization whose outcomes are of secondary importance, perhaps 5.58 to 1 could be used as a base-line for Auxiliary sub-programmatic support; if a sub-program does not deliver that baseline involvement return on investment, it is too costly. In this study, the Surface and Air Operations Support sub-programs fall in this category. In order for Surface Operations Support to meet this standard, direct sub-programmatic funding would be mostly eliminated, leaving just FTE support costs. Aviation Operations Support could not meet this standard, even if all direct programmatic funding were eliminated, due to necessary FTE support costs. Again, this is presented for completeness of review and consideration; cutting funding to the Surface Operations Support sub-program is <u>not</u> being proposed for action.

E.   RESOURCE-NEUTRAL POLICY OPPORTUNITIES

1.   Resource Donor—Auxiliary Aviation

The Auxiliary Air Operations Support sub-program, as identified in Table 6, is the only operational sub-program with a negative return on investment; it also offers no support for the first Auxiliary mission of supporting recreational boating safety, only minimal contributions for the second Auxiliary mission of supporting Coast Guard operations, and is often tasked for logistics support or low priority tasks—the third and lowest Auxiliary mission. The approximately $1.8M Auxiliary programmatic funding presently dedicated to the aviation sub-program could be reallocated elsewhere within the Auxiliary program. While this would eliminate the Auxiliary aviation sub-program, this action would not necessarily require the complete elimination of volunteer aviation support for the Coast Guard; the Civil Air Patrol already performs the same duties.

There are occasions where volunteer-piloted civil aircraft support of Coast Guard missions is both appropriate and economical. This prompted a secondary investigation into the appropriateness and expense of reassigning the Auxiliary Aviation mission to the Civil Air Patrol (CAP)—a mini analysis of its own. That detailed analysis can be found in Appendix B.

The outcome of that analysis is that the U.S. Air Force's auxiliary CAP could absorb the members, assets, and missions of the U.S. Coast Guard Auxiliary aviation sub-program and provide similar volunteer aviation services back to the Coast Guard on a reimbursable basis. The shifts in the general volunteerism culture and American economy have caused a reduction in the personal expenses that volunteers are willing to absorb in the course of fulfilling their volunteer interests. Additionally, government regulation has swelled the expense and complexity of owning and operating a civil aircraft beyond the grasp of many Americans. The CAP has a sound concept in providing and maintaining federally owned aircraft—equipped with technology suites well beyond those of private owners.

The CAP operates in every U.S. state, including Alaska, where there is no Auxiliary aviation program. Despite its expanse and considerable active duty Coast Guard aviation presence, the decision was made decades ago to disallow an Auxiliary aviation program in the Seventeenth Coast Guard district (state of Alaska). The reported reason for that policy decision is that the region is too hazardous—and therefore risky— for the Coast Guard to properly administer and task volunteer aviators. With the opening of Arctic waters, and the growth of human activity in northern Alaska, there is a need for an increased government presence in the region. The CAP operates in Alaska and could offer volunteer resources for some of the Coast Guard's low-risk missions in the south, allowing military assets to be used for the increasing demand of higher priority missions.

On March 1, 2012, the Civil Air Patrol Director of Operations gave a presentation to the Coast Guard Office of Search and Rescue at Coast Guard Headquarters. In that briefing which offered CAP "augmentation" to the Auxiliary aviation program, the "typical" hourly chargeable agency mission expense of $150 per hour was given—a cost of only $10 per hour more than the effective current cost for the Coast Guard to maintain an in-house volunteer aviation support (see Appendix B for explanation). The CAP official made it clear to the Coast Guard that CAP has the resources, training, and interest to assist in the Coast Guard's volunteer aviation missions, at a cost comparable to what the Coast Guard is already paying to maintain its non-standard, and lesser-equipped program. The CAP maintains a fleet of government-furnished aircraft with fully supported, state of the art technology packages, and specialized capabilities that far exceed Auxiliary capabilities. The Coast Guard could use a portion of the $1.0M aviation SAMA funding, which already resides outside the Auxiliary program budget, to fund as-needed CAP support. In place of maintaining an aviation minority within its nautically focused volunteer program, those SAMA resources (or perhaps only a mere portion of those resources) could be reallocated to directly pay for actual missions performed.

In today's technological age, employing advanced sensoring and communications, maintaining a physical observation presence through conducting volunteer Maritime Observation Mission (MOM) patrols is outmoded (MOM is discussed further in Appendix B). It has become a catchall for non-critical and often self-initiated volunteer

aviator activity—a euphemism. If the thousands of hours of non-critical Auxiliary member initiated or prompted aviation MOM patrols—and their accompanying financial reimbursements—were reigned-in and task-focused, there would be a considerable cost savings to the organization. These same volunteers, employing their Auxiliary experience, yet integrated into and overseen by an agency whose primary purpose is providing aviation resources, could better contribute to the security needs of the nation, and likely increase the safety of the volunteers.

- Finding #14. The Civil Air Patrol is capable of providing volunteer aviation services to the Coast Guard at an as-needed hourly rate comparable to those provided by the Auxiliary Aviation sub-program.

2. Resource Reallocation—Other Auxiliary Programmatic Needs

Most likely, a compelling future funding need will drive the necessary identification of a within-program funding source (Auxiliary Aviation), as opposed to an independent and proactive programmatic improvement effort. The Auxiliary program is presently operating with several unfunded or under-funded needs. The Auxiliary program could immediately use any and all funds made available at any time; the program managers could either bolster existing programs and needs, or the funds could be used to support new initiatives. There is a regular standing "list" of unfunded needs.[102] To date, the Auxiliary program has not harvested from within the program to fund those needs; they either found funding through the good will of other Coast Guard programs or simply remain unfunded.

The needs and initiatives of the Auxiliary program shift over time. Some are resourced while others are not. Because this study may have a significant dwell time, only two very general uses for internally reprogramed funds are identified. A current needs assessment should be conducted should resource reprogramming take place.

First, the funds could be used to support existing Auxiliary programmatic needs. For example, the AUXDATA program is currently in "care-taker" status due to no funding source. The one and only computer program used to track the membership,

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[102] Minutolo, in discussion with the author, June 18, 2012.

qualification, and activity information for the Auxiliary's 30,000 volunteers is currently unsupported and is only receiving anti-virus updates. There is a list of over 50 programming adjustments that require dedicated programmer action. The Coast Guard requires over $1M to fully support the AUXDATA program.[103] Additionally, surface SAMA is reimbursed at a rate of 35% of calculated cost. Additional funding of surface SAMA, making it less costly for volunteers to offer and operate their boats, may turn the long-trending loss of boats around, much like it did for aircraft. Also, the limited ranks of full-time Director of Auxiliary personnel would certainly put additional employees to work, ultimately increasing the oversight and possibly safety of the volunteers. There are numerous existing programmatic needs that could immediately absorb any additional funding.

Secondly, the funds could be used to fund new initiatives. The Coast Guard, through its experience responding to the Deep Water Horizon oil spill, is implementing a Coast Guard-wide Incident Command System training enhancement program—for only its active duty and reserve members. The volunteers of the Auxiliary could be incorporated in these training and contingency event readiness efforts. Presently, despite expressed interest and demonstrated successes, the Auxiliary is being overlooked in this area.

As stated, it is anticipated that a compelling Auxiliary program need, in support of either an existing program or a new initiative will likely drive a resource-neutral policy shift at some point in the future; those in leadership positions at that time should weigh the organizational needs and use this research primarily as a guide to make the difficult decisions regarding from where to pull those resources.

- Finding #15. The Auxiliary program has under-funded demands in both general administration and operational programs that could immediately use any and all funds reprogrammed from elsewhere within the program.

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[103] Minutolo, in discussion with the author, June 18, 2012.

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V. DISCUSSION OF FINDINGS AND RECOMMENDATIONS

A. SUMMARY OF FINDINGS

The 15 specific Research Findings are compiled in Table 7 and repeated in Appendix C.

Research Findings

Auxiliary Membership

#1   Auxiliary membership numbers increase and decrease over time; Auxiliary membership is generally smaller than the past 40 years, but larger than the 30 years before that. National events and Coast Guard policies can be found to negatively impact membership over the short term. However, those negative impacts are temporary; volunteer interest remains and new members are regularly recruited.

#2   Volunteer membership in the Auxiliary has been generally independent of the trends in national recreational boating registrations. Since 2007, Auxiliary membership has grown despite declines in boating and boat sales.

Auxiliarist Participation

#3   The average duration of Auxiliary Aviation missions is in decline while the duration of all other missions is relatively constant.

#4   The number of operational hours served and missions performed in Surface and Air Operations Support is increasing despite a general decline in the number qualified participants. Fewer qualified volunteers are reporting more hours and missions.

#5   The relatively constant 50-year declining trend in the number of surface facilities (boats) is independent of national retail powerboat sales and Coast Guard financial support (SAMA).

#6   The offering of aircraft for use as Auxiliary facilities is largely dependent on the degree of Coast Guard financial subsidization (SAMA) and maintenance requirements (TBO).

#7   There has been a three-fold increase in the presence of aircraft as a percentage of all operational facilities since the institution of aviation SAMA in 1997.

Auxiliary Demographics

#8   The membership of the Auxiliary is primarily older and White.

#9   The American White population representation is decreasing while the three largest American non-White minorities are growing. The American Hispanic population representation, which is already the largest minority represented in the Auxiliary, is growing rapidly.

Auxiliary Resourcing

#10   Auxiliary membership administration, the overhead expense for managing the organization, consumes approximately half of the direct resourcing of the Auxiliary program.

#11   The direct funding of the Auxiliary program, when adjusted for inflation, has progressively decreased since an infusion immediately following 9/11.

Auxiliary Program Return on Investment

#12   Auxiliary operational activities – with the exception of Air Operations Support – offer significant measured outcomes at minimal per unit expense to the Coast Guard, and have a positive volunteer involvement return on investment.

#13   Air Operations Support has limited measured outcomes and a negative volunteer involvement return on investment, yet consumes 12.7-percent of Auxiliary programmatic resourcing.

Resource-Neutral Policy Opportunities

#14   The Civil Air Patrol is capable of providing volunteer aviation services to the Coast Guard at an as-needed hourly rate comparable to those provided by the Auxiliary Aviation sub-program.

#15   The Auxiliary program has under-funded demands in both general administration and operational programs that could immediately use any and all funds reprogrammed from elsewhere within the program.

Table 7.   Research Findings

The primary goal of this study is to assess the return on investment of the major operational programs of the Coast Guard Auxiliary by identifying and highlighting organizational and volunteer support for those primary programs. Coast Guard leaders voice appreciation for the Auxiliary program, yet resourcing has been cut at a steady rate since a high-point several decades ago—the exception is an infusion of funds following the attacks of 9/11. The volunteer leaders in the Auxiliary have expressed membership unhappiness over various concerns, yet this research shows that citizens continue to join and the missions continue to be performed. The Auxiliary continues to perform its missions despite decreased organizational support by the Coast Guard—for now; while decreased resourcing is not presently affecting volunteer recruitment that may change in the future.

Despite fluctuations in Auxiliary membership and boat and aircraft facility numbers, the past eight years have shown continued growth in volunteer hours in all but one of the operational programs, public education; in general, Auxiliarists are serving more hours and executing more missions. Although public education is in gradual decline due in part to the successes of "competing" organizations, new internet delivery resources, and general declining registration by the public, it remains a successful program; the Auxiliary taught over 15,000 boating safety classes in FY 2011, at a direct expense to the Coast Guard of just under $15 per class—not per hour, and not per student, $15 per several hour class full of students. This appears to be a reasonable investment in public RBS outreach and education, a Coast Guard Mission.

The demographics of the Auxiliary appear to be relatively homogenous: older and white. That is viewed as neither positive nor negative in this analysis and does not appear to have an immediate influence on the tasking or resourcing of the Auxiliary—the focus of this study. The Auxiliary is an official branch of the Coast Guard. Much like the rest of government, the Coast Guard seeks to match the demographic representation of the U.S. population. The presented data should assist the Coast Guard and Auxiliary, both paid and volunteer leadership, in quantitatively assessing present demographic gaps in the Auxiliary, and the Nation's projected demographic composition. The demographic makeup of the country, the country's future volunteers, is changing dramatically.

Between 2006 and 2010, there was a 26% decline in Auxiliary surface facilities and a 22% decline in Auxiliary aviation facilities. During that same time period, there was a 55% decline in U.S. retail powerboat sales and a 5% decline in overall recreational vessel registrations. Also during that period, the overall net membership of the Auxiliary dipped and returned to approximately the same level. A possible explanation for this is that many boat-owning Auxiliarists, following the U.S. market trend, moved away from powerboat ownership—and left the Auxiliary—while interest in joining the Auxiliary remained strong. The decline in the number of Auxiliary Surface Facilities has been relatively consistent since the Auxiliary's high water mark in the mid 1970s. This is not a new circumstance. The combined realities of steadily increasing boat ownership expenses and tightening Coast Guard regulations will likely continue this 40-year trend. In the author's opinion, the decline in the number of boats is not a condition that can be reversed unless the Coast Guard devotes additional resources to the Surface Operations Support sub-program, which already consumes almost 25% of Auxiliary programmatic resources. The volunteer members of the Auxiliary are progressively offering fewer and fewer facilities, and are pursing activities other than Surface and Air Operations Support.

The participation in the Auxiliary Aviation program appears to be driven heavily by the financial support provided by the Coast Guard; the number of aircraft tripled in the years following the introduction of SAMA in 1998, and then rapidly declined following the implementation and enforcement of increased engine maintenance (safety) requirements in 2003. In contrast, the introduction of SAMA for boat owner/operators in 2006 had little to no influence on the decades-long decline in the number of surface facilities in use in the Auxiliary. Without including additional supporting anecdotal observations of the program, the purely statistical information presented indicates that the Auxiliary Aviation program exists primarily *because* of the program's heavy subsidization by the Coast Guard. That prompts the questions, "What are the motives of some in the Auxiliary aviation program?" and "Do the organizational outcomes/benefits to the Coast Guard justify the costs of Auxiliary Aviation?" The negative returns on both mission-outcome and volunteer-involvement return on investment indicate that the answer to the second question is likely, "No." However, the Coast Guard is not a for-

profit organization; it is a federal agency, and sometimes negative returns are a necessary fact of life. But in a climate where cuts must be made in one area to support another, a negative-return program often makes a good donor to support other programs with a more favorable return on investment.

The basic premise of this analysis is that the Coast Guard will provide no new resources to the Auxiliary program; if any changes are to be made, they must be resource-neutral. It is an interesting yet unfortunate reality for the Auxiliary program: despite the organizationally miniscule programmatic funding (0.24% of the Coast Guard budget) and the demonstrated tremendous return on investment in actual mission outcomes, the program stands no practical chance of gaining additional resources. While this study does not attempt to study the impacts of increasing or decreasing overall resourcing, there are existing programmatic needs that may eventually negatively impact the program if not addressed. In the present austere fiscal climate, an undesired yet realistic outcome of this study will be for the Coast Guard to use it minimize the impact of *reducing* the staffing and funding to the Auxiliary program, to help address resourcing shortfalls elsewhere in the Coast Guard.

B.   RECOMMENDATIONS AND IMPLEMENTATION CONSIDERATIONS

The Auxiliary is touted for its great service for, and economy to, the Coast Guard. That service at great economy can be both and asset and an obstacle. On one hand, the Auxiliary's volunteer members regularly receive respect and praise for their selfless service; on the other hand, the Coast Guard may be inclined to forget that volunteers are not completely free. This study presents that the Auxiliary is currently sound, but some attention by Coast Guard leadership could positively impact its present and future service. Having studied historic trends in volunteer membership activity, Coast Guard resourcing, and programmatic outcomes, several policy and resourcing opportunities present themselves.

This study offers five recommendations and a sixth section offering potential future influences, which are discussed in detail in this section.

In brief, the recommendations are:

1) Focus on the mission.

2) Monitor and Prepare for the eventual impact of decreasing boat facilities.

3) Encourage and support volunteer racial/ethnic diversity.

4) Consider available programmatic resourcing when tasking the Auxiliary.

5) Eliminate the aviation sub-program and reprogram the funds as necessary—within the Auxiliary program.

Detailed recommendations:

1) "Build the Program, and They Will Come…"—Focus on the Mission

The Coast Guard should provide the appropriate resourcing and policy guidance for the Auxiliary sub-programs it most desires volunteer support, even if that means short-term losses in membership from volunteers with special interests outside of those sub-programs. If the Coast Guard's primary focus is on the mission, and not just volunteer recruitment and retention, volunteers will continue to serve as permitted by the Coast Guard. (Supported by Findings 1, 2, 4, 5)

What does the Coast Guard need of its volunteers? This simple question is not regularly addressed—either directly or with any specific clarity. The most transparent guidance that the Auxiliary has is the Coast Guard Auxiliary Policy Statement, which was modified and signed by the current Commandant of the Coast Guard when he assumed command in the spring of 2010.[104] This one-page document broad-brushes three prioritized overarching Auxiliary missions: 1) to promote and improve recreational boating safety, 2) to augment Coast Guard crews and facilities, and 3) and to support operational, administrative, and logistical requirements. Unless those priorities shift, they remain the "standing orders" for other Coast Guard leaders to follow.

A later recommendation identifies an opportunity to shift resources from a lesser-performing sub-program (Auxiliary aviation sub-program) that supports operational administrative and logistical requirements (a third priority mission). The recommendation

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[104] U.S. Coast Guard Auxiliary Association, District 11 Southern Region, Robert J. Papp, Commandant, "U.S. Coast Guard Auxiliary Policy Statement," (n.d.), http://www.d11s.org/leadership/commandant-policy.php.

proposes to bolster existing higher ROI sub-programs and to support the higher priority missions of promoting and improving recreational boating safety or augmenting Coast Guard crews and missions (first and second priority missions, respectively). It should be anticipated that the elimination of the Auxiliary aviation sub-program and a shift in volunteer aviation support of the Coast Guard from the Coast Guard Auxiliary to another organization would cause a minor decrease in membership. In addition to the approximately 666 aviator members who would be informed that they could no longer fly as Auxiliarists, there likely are some non-aviator volunteers who would object to the policy shift, and quit. As was seen in several previous policy shifts, the decline would be temporary and the pre-event growth would be quickly restored.

Despite generally increased activity by the Auxiliarists who are qualified and serve aboard boats and aircraft, their numbers are decreasing and this trend will eventually become unsustainable. With the exception of vessel examination, which has experienced a minor net growth, progressively fewer Auxiliarists are qualified and participate in the traditional Auxiliary RBS related sub-programs. Volunteers are pursuing more operationally focused activities such as serving directly with Coast Guard members aboard Coast Guard units or assisting in regulatory in marine safety missions. Along with authorized and supported sub-programs, there are some Auxiliarists who join the organization with little interest in supporting existing missions. Occasionally, these volunteers have a personal agenda and use their Auxiliary membership to independently pursue that agenda. Volunteers who "freelance" in the Auxiliary may offer limited positive outcomes and can potentially create an unnecessary, unapproved, and otherwise disruptive liability to the Coast Guard when not approved by Auxiliary program managers. The Coast Guard should recognize this volunteer dynamic and manage Auxiliarist expectations by clearly and regularly stating that while appreciating volunteer interests, the Coast Guard has specific support needs that they are asked to support; please share ideas for improvement, while contributing to existing approved Auxiliary missions. If a volunteer does not meet organizational expectations, and chooses not to support authorized activities, he or she should not be permitted to participate in the Auxiliary. Despite some voiced complaints and occasional membership dips, volunteers

continue to join the Auxiliary. The Coast Guard should support the desired Auxiliary missions, discourage un-resourced activity, and encourage volunteers whose interests do not align with that mission set to pursue participation in another valued volunteer organization.

2) "Coming Ashore"—Decreasing Boat Facilities

The Coast Guard should acknowledge that there will eventually be a turn in the trend of fewer qualified Auxiliarists performing more Surface Operations missions, with fewer boats. The trend in hours served and missions performed should be monitored for a tipping point where economic considerations likely become a controlling influence for Surface Operations, similar to Aviation Operations. That point in the future will offer a decision point: If volunteer support through privately owned boats is still desired, an infusion of resources will be required to turn the trend and continue their service—likely at a negative return on investment. Otherwise, the Surface Operations sub-program should be reviewed for viability and alternative uses for its 25% share of the Auxiliary's programmatic resourcing. The Surface Operations sub-program is currently healthy and provides a positive return on investment; no changes are recommended. (Supported by Findings 4, 5)

Many new Auxiliarists do not own boats, and most certainly do not own aircraft; it is likely that many are joining the Auxiliary to participate in the newer, non-boating related, Coast Guard support activities.

The Auxiliary has been losing boats at a steady rate over the past 40 years. The expense of boat ownership and meeting Auxiliary facility equipage and maintenance standards is high, and will continue to grow into the foreseeable future. As presented in Chapter IV, the ratio of the overall number of Auxiliarists per boat facility has grown from 2.2 in 1973 to 9.8 in 2011. Many new Auxiliary members neither own a boat nor are interested in boating. This study shows that there is no decline in the Boat Operations Support sub-program's performance, but that time will arrive at some point in the future. The Coast Guard should consider this when plotting the future mission tasking of the Auxiliary.

3)   "Future Volunteers"—Racial/Ethnic Diversity

The Coast Guard should assess the present membership characteristics of the Auxiliary and anticipate the impacts of trending U.S. volunteer interests and demographic shifts on Auxiliary participation. (Supported by Findings 2, 4, 8, 9)

The membership of the Auxiliary is largely older and White. That is known and is regularly discussed by both the volunteer Auxiliary and military Coast Guard leadership. As discussed in Chapter IV, previous studies addressed the membership of women in the Auxiliary; at over 22% of present Auxiliary membership and comparable representation in leadership positions, there do not appear to be barriers to participation for women. While female representation is outside the scope of this study, this present data point may support future research and consideration. This study presents evidence that Hispanics are already the largest American minority group, and their representation is growing rapidly. The Coast Guard should determine if there are trends in the activities specific to this group that may be worth note; there could possibly be specific interests or barriers to participation that the Coast Guard could address to enhance future volunteer support for the Coast Guard.

The Auxiliary is a very formal and hierarchical organization: the volunteers are organized into various units and hold positions with specific responsibilities within them; the written doctrine is oftentimes stifling (the main organizational manual is 710 pages long—and there are numerous others…); the uniforms are military look-alikes; and members are expected to act within specific guidelines, as an obligation of membership. This structure appealed to the volunteers of the 1950s–1970s. As mentioned in the Literature Review, the demographic is changing and contentment with that model is shifting. While it has already been stated, this study is not a review of the *culture* of the organization, only the resourcing and tasking of its present and near-future state. It is important to mention that there is a natural evolution and cultural shift taking place that the organization may not be addressing. Should events cause that shift to make a leap, the Auxiliary may be left without members. In addition to studying the tangible resourcing and tasking, the Coast Guard should expend some effort performing some strategic planning for the volunteer demographics of the future.

By seeking ethnic and racial diversity, the Auxiliary will make steps toward bolstering the overall volunteer membership ranks. It appears that targeted recruiting in the 1970s increased the representation of women in the Auxiliary. Current efforts related to targeted recruiting may not be sufficient to affect minority representation. The Coast Guard should research whether its existing policies and practices prevent volunteers from joining the Auxiliary and supporting its missions. This is differentiated from catering to a special interest or niche volunteer; perhaps existing minimally resourced programs such as the Auxiliary Interpreter sub-program (virtually "free" to the Coast Guard), which harnesses the language skills of hundreds of volunteers to support the missions of the Coast Guard and multiple other U.S. Government agencies, could be highlighted or enhanced. It is possible that a program in which these culturally diverse and multi-lingual Auxiliarists could help impart their language skills to Coast Guard members, giving them additional tools in a diversifying world.

In addition to considering new missions versus existing missions, this study presents evidence that the Auxiliary is experiencing a shift in the interest and participation habits of existing Auxiliarists. This shift could reflect generational dynamics in the types of missions of interest to the volunteers and their behaviors. Missions such as teaching classes, conducting on-the-water patrols, and performing weekend safety checks of recreational boats are the foundation missions of the older Auxiliary members. They are also regularly occurring group activities. The newer missions of marine safety and direct Coast Guard unit support are generally being pursued by the younger Baby Boomer and Generation X members, and are gradually supplanting the traditional Auxiliary missions that require attendance at organized and scheduled events. Perhaps modifying the scheduling of some events would help grow participation.

A newcomer to the Auxiliary mission profile is the opportunity for Auxiliarists to provide a direct contribution to Coast Guard contingency operations. The contribution of Auxiliarists by assuming various roles in the Incident Command System (ICS) during the Coast Guard's Deep Water Horizon oil spill response was previously discussed, and offers an example of a broad future opportunity for Auxiliarists. Coast Guard leadership should acknowledge the heavy surge demands placed upon the Coast Guard during that

response and leverage its volunteer component, which comprises 35% of the extended "Team Coast Guard" workforce, to provide support during responses. Auxiliarists could add regionally dispersed depth to the numbers of vetted and qualified "teammates." Auxiliarists could gainfully contribute to future large-scale contingency responses—if properly trained and practiced in advance.

4)   "Balance the Checkbook"—Programmatic Resourcing

Assuming additional funding is unavailable, the Coast Guard should assess the outcomes and required resourcing when suggesting a new Auxiliary program or discussing the utility of an existing Auxiliary program. (Supported by Findings 10, 11, 12, 15)

This study does not seek to offer a prescriptive "solution" to an Auxiliary "problem." Given the assumption that gaining additional resources to the Auxiliary program (either full-time program managers or direct funding) are unlikely, this research presents an opportunity to increase the return on the existing investment. In an ideal world, this investment would *increase,* to support growing organizational needs and shifting volunteer interests. But the Auxiliary program exists in a very much less-than-ideal world. The existing sub-programs are reviewed herein with a focus of maximizing that return by reprogramming resources from within.

The presented recommendations deliberately do not offer a prescriptive road map for how to re-use the resources gained by reprogramming existing resources; existing Auxiliary programmatic needs could immediately absorb them. Increasing support to existing missions in the form of oversight, training, and equipment, intuitively increases the proficiency, safety, and performance of those missions. This study only presents the first half of the equation: where to find the resources necessary to improve the return on investment of the Auxiliary by funding existing or future program elements. *If* Coast Guard Leadership intends to pursue any programmatic shifts in the future, this study suggests that a broad, inclusive, and timely consideration of needs and opportunities be performed at that time in order to assess the existing programmatic needs and the impact of adding additional sub-programs to the resourcing demands of the Auxiliary. Adding

new demands on existing resources ultimately drives down the level of support available in the form or training, equipment, and oversight—and could adversely affect volunteer safety and Coast Guard liability.

Additional or reprogrammed resources could be applied to shore existing programmatic needs, or they could also be used to create new sub-programs. Experience shows that reprogramming the savings to only support existing requirements would not be a popular outcome. Some would prefer that something new and exciting be—at least partially—created as a result of this effort in order for it to gain the support of most Coast Guard leaders and/or volunteer Auxiliarists. Past Auxiliary mission scope, creep has already been addressed; perhaps it is time for the Coast Guard to make the difficult decision to stabilize the resource base of its volunteer branch and not seek newer and arguably more exciting uses. It is recommended that, unless existing Auxiliary programmatic resourcing needs are otherwise met, harvested funding should first support existing shortfalls or weaknesses prior to funding new initiatives.

A viable and negligible-cost opportunity exists to refocus Auxiliarist efforts where the Coast Guard can direct future Auxiliary support, in the existing Coast Guard Unit Support sub-program, where Auxiliarists integrate and serve at Coast Guard units. Auxiliarist interest and resulting support during the Deep Water Horizon oil spill response of 2010–2011, which required the largest Coast Guard mobilization and response since World War II, proved that the Auxiliary could serve as a contingency support force. The Auxiliary can support and supplement local Coast Guard operations during periods when the Coast Guard is extended beyond routine operating capacities. One can think of the Auxiliary as increasing the Coast Guard's "bench strength" (football team analogy). While some members of the Auxiliary opt to perform routine boating-related operations, as have been performed for the past 70+ years, the "growth market" is contingency support. This in no way suggests or recommends that Auxiliary volunteers should be front-line responders; on the contrary, Auxiliary related issues during the Deep Water Horizon response proved deploying volunteers during a contingency response to

be wrought with problems, enough and of sufficient severity to make it ill-advised.[105] However, this does suggest that these vetted and trained volunteers can support the Coast Guard in other support roles—locally. For example, when a future event requires the deployment of an active duty Coast Guardsman from a Coast Guard unit, trained Auxiliarists in a local commuting distance to the contributing unit could pool their availability and perform a majority of that member's duties for a protracted period of time; five to 10 Auxiliarists could each contribute a day or a period of time each week to assist in maintaining that Coast Guard unit's level of readiness during a Coast Guard response elsewhere.

     5)   "Final Approach"—Eliminate the Aviation Sub-Program

The Coast Guard should eliminate the Auxiliary Aviation sub-program, collaborate with the Civil Air Patrol to perform appropriate duties as needed, and reprogram the savings within the Auxiliary program. (Supported by Findings 1, 3, 6, 7, 12, 13, 14, 15)

Specifically, the Coast Guard should terminate the Auxiliary Aviation sub-program, harvest the approximately $1.8M funding that directly supports the program, and re-use those funds, in the absence of more compelling needs, to stabilize existing programmatic funding shortfalls, and to support training Auxiliarists in Incident Command System and other skills of value during a contingency response. In addition to the $1.8M saved in direct sub-programmatic funding, this would also save approximately $1.0M in aviation SAMA funding; this $1.0M could be used as a baseline to fund CAP support charges.

It is strongly encouraged that the Coast Guard act on this recommendation in its entirety; the Coast Guard should not simply defund the Auxiliary aviation sub-program without reinvesting the harvested funds in its volunteer branch, which provides valuable outcomes and generally delivers a positive volunteer effort return on investment. It is also encouraged that the Coast Guard allow the Auxiliary program to reinvest the $450K in full-time equivalent employee value that currently manages the aviation sub-program; the

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[105] Michael D. Barner, Internal Coast Guard Headquarters White Paper to CG-5353. "Barriers to Nation-Wide CG Auxiliary Participation in DWH Response," January 19, 2011.

already small team of Coast Guard Officers, Petty Officers, and Civilians dedicated to the Auxiliary program are already overtasked.[106] Allowing the Auxiliary program's full time employees to remain and reallocate their time across existing demands would allow them to better support the diverse administrative needs of the Coast Guard's 30,000 volunteers and the remaining sub-programs.

The termination of the Auxiliary aviation sub-program would take several months. Appropriately, it should have a gradual sunset and terminate before the end of a fiscal year. During that time, a group of combined Coast Guard and Auxiliary subject matter experts should identify specific opportunities and the requisite funding needs—up to the approximately $1.8M calculated herein. This study intentionally does not specifically propose those opportunities and needs, because they are complex and change over time. Several current opportunities such as supporting the needs of the AUXDATA membership database and contingency support training for Auxiliarists are included as contemporary examples, but a thorough and timely review should be conducted at that point in time, should a resource reprogramming effort take place.

This recommendation is direct and blunt. To the eye of a researcher, defunding and eliminating a program could be a simple task. In reality there are 666 people who currently volunteer in the Auxiliary—albeit in a niche—who would have to either change their mode of volunteerism in order to remain in the Auxiliary, or leave the Auxiliary. Many of these aviation-oriented individuals have contributed honorably and are very much a part of the Auxiliary membership's culture. The membership of the Auxiliary, by the nature of their volunteer affiliation and conformance with a military and government organization, and the wearing of military uniforms often indistinguishable from that of active duty Coast Guard men and women, typically understand the organization is not a democracy. There are appointed (not elected) Coast Guard Officers in charge, and their decisions are final. Most Auxiliarists understand and embrace this principle. But, the

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[106] Barner, Internal Coast Guard Headquarters White Paper. "USCG Regional Director of Auxiliary Office Staffing Study.

responsible Officers charged with leading these volunteers must keep in mind that Auxiliarists are not active duty military members; they are volunteers who can (and do) quit when unhappy with the organization.

In presenting change to volunteers, even uniformed volunteers, one must properly frame the change. As Dr. Philip Zimbardo wrote, "We are adverse to things that are framed as potential losses and prefer what is presented to us as a gain, even when the ratio of positive to negative prognoses is the same. We don't want a 40% chance of losing X over Y, but we do want the 60% chance of gaining Y over X."[107] These dedicated and experienced volunteers should not be told that a change is being proposed due to an inefficiency or low result. Rather, the frame should be that the Coast Guard recognizes and appreciates their contribution, and has found an "opportunity" for them to continue to perform that important work—elsewhere.

In the case of potentially shifting the Auxiliary Aviation program to the Civil Air Patrol, the presentation could include both framing and straightforward facts. The training and support that CAP would provide, with the full backing of the Air Force, easily exceeds that offered by the Coast Guard. The resourcing, in the form of corporately owned aircraft, greatly broadened mission and geographic diversity, increased training support, and 50-times larger like-focused aviator membership, should be a natural draw for Auxiliary Aviators. However, it is anticipated that should a business decision to organizationally shift the responsibility and oversight of volunteer aviator support for the Coast Guard to CAP, some pilot Auxiliarists will feel unappreciated or worse, betrayed.

Should this proposal be implemented, Coast Guard pilots, people who regularly work with and better understand this small volunteer pool's motivation, and sometimes-emotional association with the Coast Guard, should be consulted for their recommendations. To fully understand why these volunteers currently choose to associate with the Coast Guard Auxiliary and have not already shifted to CAP is to begin to formulate the frame to help them transition to a new organization. It should be

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[107] Philip Zimbardo, Lucifer Effect: Understanding How Good People Turn Evil (New York, New York: Random House, 2008), 455; D. Kahnerman and A. Tversky, "Prospect Theory: An Analysis of Decision Under Risk," *Econometrica* 47 (1979): 262–91; A. Tversky and D. Kahneman, "Loss Aversion in Riskless Choice: A Reference-Dependent Model," *Quarterly Journal of Economics* 106 (1991): 1039–61.

communicated to this volunteer cadre that their sense of patriotic pride in volunteerism, as well as their tangible and intangible needs, whatever they are, can be met just as well if not better, by another organization—CAP.

It would also be wise to include the full-time Air Force CAP program managers—the Air Force Officers who parallel their Coast Guard Counterparts—in this decision. Once an agreement is made by the two military services regarding how to continue the service provided to the other, the volunteer leadership of the two organizations should be brought in, briefed on the goal, and asked to work together to formulate a plan. An execution plan created by the volunteers—for the volunteers—meeting the organizational needs of both services, would likely be much more successful than one "imposed" on the two volunteer organizations by the two military services.

6)   The Unexpected—What if…

The Auxiliary is strong and successful today. How would this proposal—and more importantly, the Auxiliary—respond to a "Black Swan" or a dramatically impacting, unlikely, and unexpected event? The terrorist attacks of September 11, 2001 were Black Swan events; they caught America off-guard, were devastating, and changed the course of history. The attacks had a great impact on the Auxiliary as well. In addition to the Coast Guard calling on the Auxiliary to backfill, supplement, and independently assist the Coast Guard in its numerous new Homeland Security missions, it also brought significant changes to the background screening process and formality of membership in the Auxiliary. In 2004, the Coast Guard instituted the Personnel Security Investigations (PSI) process for the Auxiliary. The membership Figure (Figure 5) shown in Chapter IV reflected a net loss of 9,000 members, from 36,000 down to 27,000 between 2004 and 2007. That marked impact on membership was cause for great alarm during that timeframe. In the five years since that "correction," the Auxiliary membership is growing at a steady rate comparable to the pre-PSI levels, and PSIs are an accepted requirement of membership among all members. It raised the bar for membership. Statistics show that despite the temporary decrease in membership, the Auxiliary program's performance numbers remained constant and even increased during that period. Refer back to Figures

in Chapter IV. One could postulate that those who left were contributing minimally in the first place. In hindsight, the necessary implementation of PSIs did not hurt the Auxiliary program; and it may have improved the overall quality of the organization.

The Deep Water Horizon oil spill could be considered another Black Swan event. However, while it greatly taxed the Coast Guard and stretched its capabilities to the limit, it fell squarely within existing Coast Guard responsibilities and doctrine. Unlike 9/11, the Deep Water Horizon oil spill response did not cause a major organizational change in the Coast Guard. Other major natural and man-caused catastrophes, even those large enough to be labeled Black Swans, will again prompt the Coast Guard to turn to the Auxiliary to assist, but would likely be supported within existing policy and not affect the Auxiliary program as a whole.

What if a truly Black Swan event was to occur—something previously unpredicted and arguably unpredictable: extraterrestrials land in Washington DC, an electro-magnetic pulse from the Sun disrupts electricity and electronics worldwide, the oceans spontaneously rise several feet over-night? Whether volunteer pilots are members of one organization or another would gain little attention, as there would be more important things to worry about.

Smaller (non-alien) Black Swan events are likely enough that they should be considered. The Federal Emergency Management Agency's (FEMA) National Preparedness Directorate is initiating a new national program in August 2012: the FEMA-devoted unit of the AmeriCorps National Civilian Community Corps entitled the FEMA Corps. The FEMA Corps will initially start with 1,600 full-time volunteer members (similar to the Peace Corps model). The concept is that these trained volunteers will be deployable and will respond to major emergencies alongside full-time paid responders.[108] It is possible that this response-oriented volunteer organization may appeal to existing Auxiliary members. Even though the Auxiliary is a part-time organization,

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[108] Federal Emergency Management Agency, "FEMA Corps," (n.d.), http://www.fema.gov/about/employees/femacorps.shtm.

some members may leave the organization to join FEMA Corps. It is possible that this or other organizations could be formed and would compete for the demographic that currently volunteers for the Coast Guard.

In summary, the Auxiliary is a healthy organization and this proposal offers an incremental improvement to the status quo, not a correction to a problem. *If* Coast Guard leadership enacts this proposal, they should coordinate the effort between both the military and volunteer leaders of both the Auxiliary and Civil Air Patrol. The savings realized could be used to stabilize funding for existing programs as well as new Auxiliary initiatives—or they could also be "harvested" from the Auxiliary program altogether; but that would negatively impact the program and is not advised.

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VI. CONCLUSION

A. OVERVIEW

This study is a policy analysis of the six main operational sub-programs of the Coast Guard Auxiliary. It includes volunteer participation and Coast Guard resourcing trends for the Auxiliary in the form of money and full-time employee support. It also presents the present Auxiliary demographics and how that may or may not align with the future U.S. population, and more importantly, Coast Guard goals. Lastly, it presents two return-on-investment concepts, one assigning organizational unit costs to outcomes, the other assigning a value to volunteer participation or effort.

Through looking at long-term trends and calculating returns-on-investment among these sub-programs, Auxiliary aviation stands out from the others as having a negative return, limited membership and outcomes, and can be readily re-assigned to another federal agency—the U.S. Air Force's Civil Air Patrol. The resources of this sub-program should be reprogrammed to support other Auxiliary programmatic needs.

The secondary intent of this study is to present a wealth of information and data in one location for others to use for completely unrelated uses in the future, provided the assumptions and limitations are considered. This study is intended for some to simply read and learn more about where the Auxiliary fits in to the big picture of the Coast Guard, and how it compares to similar volunteer organizations throughout the world.

B. REVIEW OF RESEARCH QUESTIONS AND SIGNIFICANCE

The primary research question is, "How can the U.S. Coast Guard adapt the U.S. Coast Guard Auxiliary to better align its tasking and maximize volunteer support of Coast Guard Missions, within existing programmatic resourcing?" This is broken down into three distinct sub-questions.

1.   **Research Questions**

- <u>What Return on Investment Do the Existing Auxiliary Sub-Programs Offer the Coast Guard?</u> This is directly and quantitatively answered in Table 6.

- <u>In What Auxiliary Program Mission Areas Could the Coast Guard Best Leverage Volunteer Interests, Skills, and Participation in the Next Several Years?</u> In general, volunteers are not bringing boats and aircraft with them when they join the Auxiliary anymore. While Auxiliary boats and aircraft are less expensive to operate than the Coast Guard assets they supplement, they comprise a large portion of the resourcing demands of the program. The four other operational sub-programs all have returns many times greater than the investment. In recent years, the marine safety and Coast Guard unit support sub-programs have grown well; they require minimal funding and permit volunteers to work directly with operational Coast Guardsmen, a goal of many new Auxiliarists. These two programs show the greatest promise in the near future. Additionally, a new initiative to train Auxiliarists to assist in contingency response support would likely draw great volunteer interest.

- <u>How Can the Existing U.S. Coast Guard Resources Allocated to Support the Auxiliary Program Be Adjusted to Maximize Its Effectiveness</u>? Funding of approximately $1.8M would be made available for reallocation if the Auxiliary aviation sub-program is eliminated and its functions assumed by the Civil Air Patrol. Another $1M, currently used to fund Auxiliary Aviation SAMA, could be reprogrammed as a baseline to fund payments to the Air Force to reimburse CAP support to the Coast Guard.

  The Auxiliary could use that funding to support current programmatic needs—or new initiatives. While reallocating the $1.8M to existing needs will bolster the existing high-return programs, funding new initiatives may draw new volunteers and expand the support the Auxiliary provides the Coast Guard. The current federal fiscal climate will likely impose a new funding mandate, standing out from others, that will drive the need to identify a funding source. What initially started as a proactive effort at the onset of this research 12 months ago will likely support a program downsizing effort at its completion. Any available funds should be used to bolster both general Auxiliary programmatic needs, such as AUXDATA, and to provide support to high-return programs.

2.   **Significance of Research**

This research is significant because there are very few people who are aware of the Auxiliary program's long-term trends in service, actual outcomes, and (small) cost to the Coast Guard. Previous studies included shorter periods of evaluation, and attempted

to assign a generalized "value" to participation or effort in the Auxiliary. The intent of this study was to give both the military and volunteer leaders better perspective regarding actual outcomes and costs, from which to make resource and policy decisions in the near future. The additional intent was to consolidate long-scattered data for other researchers to use and build upon, keeping in mind the listed data qualifications and assumptions.

The Coast Guard, and more specifically the Auxiliary, is at a challenging point in its history. Tight budgets and manpower requirements have caused the Coast Guard to minimally fund and minimally staff the Auxiliary program for years. Those years of relative neglect are being compounded by a proliferation of special-interest initiatives that require funding and oversight, funding and oversight already overextended across existing programs. This research highlights the large traditional programs and calls attention to the great return on investment they deliver to the Coast Guard. While special-interest initiatives drawn some attention, they are largely temporary, regional, and organizationally insignificant; they were not a part of this study.

As previously stated, the author has found no evidence that either the Coast Guard or the Auxiliary has used actual resourcing and performance data in any of its programmatic decisions in the past 20 years. The data presented in this research is aimed to provide Coast Guard leadership with a comprehensive assessment of the Auxiliary program—that can facilitate informed decision-making about the future of the program. While a historical review of statistics does not directly identify future needs or address the changing and often-intangible human factors of leading a complex organization, the effort can identify trends and lesser-performing aspects. The Auxiliary program has no more "efficiencies to realize" in the status quo; it is the author's opinion it is time to concentrate remaining resources on those sub-programs that deliver the greatest return on investment—and limit unresourced programmatic expansion. This resource concentration must be done if the Coast Guard expects the Auxiliary to continue to perform in a meaningful fashion.

C.   FINAL THOUGHTS

One of the duties of organizational leadership is to manage the regular supply of "great ideas." Most members of an organization have opinions, "Why don't we just…." or "If I were in charge, I'd…." It is with this awareness that the great idea of this work is presented. Great ideas can be compared to a work of art; only the originator or creator truly understands his or her intent. The work reflects the originator's understanding and biases of the world and includes or focuses on what the originator sees as important. This "great idea" of reprogramming funding from the Auxiliary aviation sub-program to other Auxiliary programmatic needs is presented with an experienced understanding of the mechanics of the Coast Guard's volunteer workforce. It is also presented from the frame of statistics, efficiencies, and effectiveness—for others to improve upon.

Collecting Auxiliary historical data was a challenge, especially for resourcing information predating 2005. This limited the scope and direction of this study; some aspects of the Auxiliary simply could not be researched because the information was unavailable. The data that was found is captured herein and, hopefully, is presented in a fashion that future researchers can use for completely unrelated purposes. I recommend the Coast Guard and Auxiliary increase and standardize the recording of Auxiliary resourcing and performance data. It is difficult to know where we are going if we do not know where we have been.

At the conclusion of the Literature Review, I wrote:

> Volunteers and volunteerism can be a sensitive topic. It is possible that few organizational leaders wish to qualify or quantify limits to their financial support of volunteers for fear of appearing unappreciative of the volunteer efforts, or otherwise discouraging their affiliation and participation.

That is not just a supposition made without basis; it is my first-hand observation, based on my experience as the program manager of the United States Coast Guard Auxiliary from 2009 to 2012. Some may read or highlight particular aspects of this work and conclude that I do not like or understand the Auxiliary. On the contrary, while this study makes recommendations that may be unpopular with some, they are made with a

deep appreciation for the hard work of the Coast Guard's thousands of present and past volunteers. These recommendations are made from a position of organizational and programmatic exposure that few share, and a realistic expectation of future resourcing; I believe that enacting these recommendations would improve an already successful government program and improve the Coast Guard's service to this Nation.

Through this experience, I have identified two general aspects of formal volunteer organizations worthy of assessment: their resourcing and tasking by the supported entity, and their culture. I chose to write this thesis regarding the former, which can be readily supported with data and can provide quantitative recommendations.

When I embarked on this endeavour, my intent was to write a thesis regarding the latter, the *culture* of the Auxiliary. The goal was to identify, through research, measures that the Coast Guard could take to adjust the *culture* of the Auxiliary, to improve its effectiveness in supporting the Coast Guard. I think there are a few fundamental cultural elements within the Auxiliary that may have been successful in the past, but are preventing new volunteer interest and contributions. During the past several decades, the Coast Guard has become busier and busier; resources, primarily in the form of oversight by full-time Coast Guard employees, have been pulled away from the Auxiliary program to address new demands. Additionally, Coast Guard leaders are at their capacity managing these new demands and have no time to provide the level of leadership and thoughtful direction as in the past. As a result, the Auxiliary and its volunteers have largely become self-managing. This is readily reflected in the statistic presented that over 71% of documented volunteer activity in the Auxiliary is "Internal Auxiliary Administration." The Coast Guard should pay renewed attention to its volunteer branch, and guide necessary organizational change, as necessary.

I propose that the Coast Guard commission a formal study of the Auxiliary, by outside researchers experienced in studying volunteerism, as was done in 1977 and 1987. That future study should specifically assess the existing cultural and organizational aspects of the Auxiliary and identify elements that could be detrimental to volunteer recruitment and performance, unhealthy to the organization, or would otherwise raise concern for a federally funded national volunteer program. However, unlike those

previous studies, I am not suggesting (another) survey of membership opinions. Rather, I am suggesting that an impartial third party with experience in volunteer culture should observe and assess the Auxiliary for opportunities to improve its organizational health and contributions to the Coast Guard.

I offer two examples of culture-influencing policies that might strengthen cultural and organizational aspects. These recommendations are not supported by the scope of this analysis, but are offered for future review and consideration:

- First, Auxiliarists *elect* their own members into leadership, or "Commodore" positions; an elected volunteer may not necessarily be the most effective leader. He or she also may not hold the skills and temperament necessary to interact with Coast Guard leadership - and carry out their guidance. I suggest that the Coast Guard should review the Commodore election process and consider implementing a "best qualified" *selection* process (selected by the Coast Guard) akin to the Coast Guard active duty assignment process; people with certain experiential and performance prerequisites may request consideration for a position, but ultimately a Coast Guard Operational Commander makes that selection and appointment—and can direct that person's replacement if necessary.

- Second, Auxiliarists are permitted (often perceived *required*) to wear Coast Guard uniforms. The Coast Guard should review the pros and cons of this and consider eliminating the allowance for Auxiliarists to wear uniforms, or at least dramatically "demilitarize" its organizational clothing. The reason for this review recommendation is twofold: While an organizational goal as stated by the senior volunteers is to draw diverse— particularly younger—members, there is building anecdotal evidence that uniforms actually deter the very demographic so vigorously sought by the present membership. Also, the uniforms are so closely similar to Commissioned Coast Guard Officer uniforms—complete with almost identical, yet silver instead of gold, officer shoulder boards—that the public with which the volunteers interact and even the occasional junior Coast Guard member get confused and think that these people are Coast Guard Officers. This is in spite of the fact that many Auxiliarists often do not meet active duty age, weight, and grooming standards. In addition to offending some career enlisted Coast Guard members (officer rank devices for a volunteer), these uniforms also draw membership interest by some who occasionally misrepresent their Department of Homeland Security affiliation and (non) military status. These limited few can cause great harm to the hard-earned Coast Guard image when they leverage their uniformed appearance for either personal gain or to bully others.

If Coast Guard Leadership implements the herein presented recommendations, an increase in organizational efficiency and effectiveness is anticipated—and hopefully has been articulately argued. While reassigning the duties of the Coast Guard's volunteer aviation support mission to the U.S. Air Force's Civil Air Patrol (CAP) would effectively "force" approximately 2% of Auxiliary membership to continue their volunteer efforts elsewhere, it would release approximately 10% of the existing Auxiliary programmatic funding to shore other important—and higher return on investment—Auxiliary sub-programs. It is worth repeating that I am somewhat anxious that this effort will be misused, resulting in the Coast Guard "harvesting" additional resources from this small and successful program, essentially discounting the entire goal of this effort.

The Auxiliary is a tremendous organization; that is evident because it is has been imitated by other organizations throughout the world. I do hope that this work, which represents over a thousand hours of effort happily dedicated, helps strengthen the Coast Guard in its mission to protect and serve this great Nation. I once saw a sign on a dentist office waiting room wall that read, "Ignore your teeth…and they'll go away." That principle also applies to formal volunteers; unhappy volunteers will "vote with their feet" and find another activity. While some argue that appeasing the complaints of some volunteers is key to keeping them around, the spirit of this thesis is that properly tasked and managed volunteers, with a healthy organizational culture, will multiply.

Semper Paratus!

APPENDIX A. RESEARCH METHOD DATA ASSUMPTIONS AND LIMITATIONS

## A.	AUXILIARY PARTICIPATION

The overall mission and purpose of the Auxiliary is articulated in U.S. Code, the Coast Guard Auxiliary Policy Statement signed by the Coast Guard Commandant, and the Coast Guard Auxiliary Manual.[109],[110],[111] The Auxiliary Manual identifies and describes over twenty-five individual programs and activities authorized for Auxiliarists.[112] There are additional programs, but those discussed in the Auxiliary Manual have either grown to significant size, require significant resourcing, or have otherwise required written policy language. Due to the large number, this policy study does not specifically analyze each and every program. It does assess the largest, most volunteer-supported authorized Auxiliary activities and their accompanying Coast Guard resource demands. The six operational sub-programs, those with the greatest number of volunteer participation hours reported in 2011, were identified for study. These six programs stand out well in front of any other sub-program/activity and represent over 78% of the non-"Internal Auxiliary Administration" hours reported in 2011; these six sub-programs represent the primary deliverables of the Auxiliary program.

In addition to analyzing a "snapshot" of the Auxiliary operational programs in FY 2011, quantitative volunteer participation data over several years is presented. Complete statistical information is available for 2003 to present (truncated at 2011 for the purposes of this study) from the AUXINFO database. This information is supplemented, as possible, by historical records collected through the "United States Coast Guard Record

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[109] *Coast Guard Auxiliary Act of 1996*, "Purpose of the Coast Guard Auxiliary."

[110] U.S. Coast Guard Auxiliary Association, District 11 Southern Region, Robert J. Papp, Commandant, "U.S. Coast Guard Auxiliary Policy Statement."

[111] U.S. Coast Guard Auxiliary Manual, Commandant Instruction M16790.1G, August 2011.

[112] Ibid., 2–5—2–19.

Collection" at East Carolina University.[113] This research effort revealed that the historical records found at East Carolina University thoroughly capture Auxiliary activity during the 1970s and 1980s. Unfortunately, the volume and completeness of documentation prior to the 1970s is much less and is likely irretrievable. Additionally, little to no documentation was found to be more recent than 1991.

The East Carolina University Auxiliary record collection was instituted in 1988. A possible explanation for the variation in record availability is that the record collection effort received much attention and interest among the Auxiliary volunteers during its first two years; members initially identified and forwarded records that had been saved in their personal files during their Auxiliary membership—and then stopped forwarding new information. As a result, there were gaps in almost all Auxiliary program participation and performance data between 1991 and the 2003, the first full-year that the online AUXDATA/AUXINFO database captured annual data. The author filled these data gaps by initiating a nation-wide e-mail request for additional records; the necessary data was found in long-time Auxiliarist personal archives (basement file cabinets). AUXDATA's predecessor program, AUXMIS, captured this 1991–2002 data, but it was fixed as of the date that data was switched over to AUXDATA (March 23, 2002). AUXMIS data is available online, but the pre-2002 annual data only reflects information for members who were presently participating in that same activity as of March 23, 2002. That renders the AUXMIS data unusable for this research effort.[114] While the data trends for the past eight years are of primary focus, earlier historical data offers an additional level of perspective.

B.   AUXILIARY DEMOGRAPHICS

The demographic composition of the Auxiliary volunteers is often discussed among the senior volunteer members. These conversations are often framed with a desire

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[113] The "United States Coast Guard Auxiliary Records Collection" is maintained by East Carolina University in Greenville, NC through a private endowment to the university in 1988. The collection is accessible to visitors in-person through the J. Y. Joyner Library's Manuscripts and Rare Books Department on the University's main campus, or online at: http://media.lib.ecu.edu/spclcoll/coastguard/. It is a collection of Auxiliarist-donated records and artifacts. Auxiliary records are not archived by the federal government.

[114] Anyone with auxiliary-related records, especially dating between 1991 and 2003, is urged to forward them to the "United States Coast Guard Record Collection" at East Carolina University.

to pursue organizational racial, ethnic, and age diversity. While membership demographics influences the culture of an organization (not the focus of this research effort), it also may influence volunteer participation and the volunteerism mode desired. The present age, sex, and racial demographic composition of most Auxiliary members is captured in AUXDATA. Approximately 16.5% of Auxiliary members decline to self-indicate race in the database; the demographic information for the 83.5% who did self-indicate race, is presented. Historic data is unavailable because the program is not designed to retain the demographic information of members from year to year; demographic information is only available for current members entered into the database. Therefore, a presentation of racial demographic trends is not possible. The discussion of demographics is brief and is intended to present a "snapshot" of Auxiliary membership as of the date it was captured.

C.   COAST GUARD RESOURCING OF THE AUXILIARY PROGRAM

The Coast Guard's direct resource expenditures for the Auxiliary program manifest in two forms: Coast Guard resources provided to Auxiliarists in the form of issued personal protective equipment, reimbursements for personal expenses incurred while performing volunteer duties, and formal Coast Guard "C-school" training expenses; additionally the Coast Guard has 74 full-time paid employees responsible for Auxiliary programmatic oversight and management. As explained in the earlier Key Assumptions section, indirect government resourcing and donated, non-profit, and state support to the Auxiliary program is not part of this study due to the complexity of the effort and the limited contribution the information would give to the analysis. The Coast Guard has the ability to control—and does control—the direct resources dedicated to the Auxiliary program.

In order to obtain a relative return on investment estimation for each Auxiliary sub-program—to answer the first research sub question—one must break down the entire program's funding into estimates of individual sub-programmatic funding. This sub-programmatic funding breakdown is not practiced, and to the best of the author's knowledge has never before been attempted. As a result, several broad assumptions were

made. Those assumptions, while potentially affecting the calculated sub-programmatic return on investment, actually result in *over* estimating individual program returns; this is because only funds that clearly and directly support a particular sub-program are included in the resourcing estimation. Any general funding that could not be specified as in direct support of a particular program was assumed to support "Internal Auxiliary Admin" or general Auxiliary program overhead. These resourcing assumptions are articulated in the following section.

1. Direct Funding

The fiscal year 2011 Auxiliary program's direct funding was closely analyzed to identify funds that clearly support one, and only one, sub-program. Because the historic funding data quality quickly declines, only overall Auxiliary programmatic funding for previous years was studied. The Coast Guard does not maintain a thorough record of historic programmatic funding data, at least not down to the level of detail sought for this effort. Fortunately, Mr. Stephen Minutolo, the Administration Branch Chief in the Coast Guard Headquarters Auxiliary Division (CG-BSX-11) personally maintained a file of funding records dating back to 2001. A synopsis of those direct Auxiliary programmatic funding records, with assumptions identified, is presented along with a graphic representation of the trend.

2. Auxiliary Program Management Staffing

The 74 full-time Auxiliary program management and staff employees (seven at Coast Guard Headquarters and 67 in 14 regional offices around the country) were paid a total of approximately $7.8M in FY 2011.[115] See Table 3 in Chapter IV for a breakdown of their military/civilian pay grade. The Coast Guard Headquarters Auxiliary Program Management office is composed of seven employees. Their time is assumed to

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[115] Salary estimates in this study were made using the Coast Guard "Standard Personnel Costs" (SPC) tables maintained by the U.S. Coast Guard Planning, Resources, and Procurement Directorate. These standardized costs are the same values used by the Coast Guard when making human resource-planning and budgetary decisions.

be 100% attributable to general program management or "Internal Auxiliary Administration," even though a portion of their time is also spent in support of the operational sub-programs studied.

The budgetary equivalence of the time dedicated by the 67 Coast Guard full-time employees (FTE) who manage the Auxiliary programs in the field was estimated. A questionnaire forwarded by the Coast Guard Headquarters Auxiliary program manager was employed; the 14 full-time regional Directors of Auxiliary, Coast Guard Officers, were asked to indicate what percentage of their time they and each of their individual staff members devote to each of the studied Auxiliary programs. This time is equated to a dollar-value in Chapter IV.

D. DATA QUALIFICATIONS AND LIMITATIONS

- Volunteer hours represented in the AUXINFO database are self-reported. On occasion, some Auxiliary volunteers have been found to over-report their hours or accomplishments; much of the end-of year recognition is based on hours served—and some members are quite competitive. Conversely, others report that the effort required to ensure a complete accounting of their time is tedious, and as a result, do not make the effort to report much of their contributed time.[116] Auxiliary volunteer leaders regularly encourage members to report and record their contributions, to accurately represent the organization's contributions and to facilitate analysis—like this study.

- While capturing the sub-programmatic support of the majority of Coast Guard direct funding for the Auxiliary program, the portion that is not being assessed is the funding forwarded to the 14 regional Director of Auxiliary (DIRAUX) offices to use, at their discretion, for Auxiliary programmatic needs ("AFC-30" funds). This amounts to $2.7M (15.5%) of the $17.4M attributed to the Auxiliary Program in FY 2011.[117] The data collection process would be greatly complicated if it were to attempt to identify exactly how these funds are expended, and would have a limited affect on the analysis.

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[116] Steven J. Minutolo (CG-BSX-1 Chief of Administration Branch), in discussion with the author, February 22, 2012.

[117] Stephen J. Minutolo, e-mail message to author. "CG-BSX-1 FY-12 Budget Info," January 13, 2012.

- Formal classroom or "C-school" training is managed directly by CG-BSX-1 staff. While actual annual expenditures fluctuate from year to year, the resourcing levels for each of the 14 Auxiliary "C-schools" are set and have remained largely unchanged for several years. The "approved" (versus "actual") expenditure for each course in FY 2011 was studied.[118]

- There are 74 full-time Coast Guard employees who manage the Auxiliary program (seven at Coast Guard Headquarters and 67 in the field). The time demands of the 67 employees in the fourteen regional Director of Auxiliary (DIRAUX) offices were polled by CG-BSX-1 and the estimated relative time required to support each operational mission is known. It is assumed the seven employees assigned to CG-BSX-1 at Coast Guard Headquarters are general programmatic overhead and their time will not be attributed to any particular program.

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[118] U.S. Coast Guard, Auxiliary Division (CG-BSX-1) Internal Coast Guard Spreadsheet, "Resources Management Performance, Training, Education Branch (FC-513) D/A FPD Executed Quota Report," June 20, 2011.

APPENDIX B. ALTERNATIVE VOLUNTEER AVIATION SUPPORT ANALYSIS—CIVIL AIR PATROL

Both the Coast Guard and Air Force maintain volunteer aviation programs. The redundancy found in these two federal agencies offers an opportunity to implement efficiencies by following the example of our Canadian neighbors to the north; the Canadian model uses one centrally managed and centrally tasked national volunteer pilot and civil aircraft organization in support of national search and rescue needs. In addition to cost savings, the implementation of the Canadian model could also increase volunteer safety.

The Coast Guard's Auxiliary aviation program and the Air Force's Auxiliary aviation program each developed independently of one another in the 1950s. It is unclear as to why their incorporation has not been considered before now (at least the author found no documentation showing that it was considered). Perhaps it was inter-agency rivalry, or perhaps it was out of concern for damaging the message of appreciation for the Coast Guard's volunteers. Canada has one—and only one—federally supported volunteer aviation-oriented program that operates efficiently and successfully. Despite some organizational differences, the mission execution of all three organizations is essentially the same. Political and cultural inertia aside, Coast Guard Auxiliarists could be assimilated into the Civil Air Patrol with minimal difficulty.

There are also several organizational synergies and general volunteerism trends that could be addressed through the Air Force absorbing the Coast Guard's Auxiliary aviation program. First, the Air Force already has the budget, personnel, infrastructure, equipment, and existing program policy to absorb and support the Coast Guard's aviation-oriented volunteers. Second, the Air force already has the federal-lead and authority to perform volunteer-supported search and rescue in Alaska's maritime environment, while the Coast Guard has no volunteer aviation program in Alaska. Third, and most importantly, Air Force leadership has presented to Coast Guard leadership that the Air Force can provide mission-specific volunteer aviation services to the Coast

Guard, on a cost-per-hour rate that is comparable to what the Coast Guard is already paying to maintain a lesser-equipped in-house program. These are discussed below and summarized in Table 8.

In Canada, the Civil Air Search and Rescue Association (CASARA) is a federally incorporated not-for-profit volunteer association, "created to coordinate the training of volunteers to augment the [Canadian Forces] primary [Search and Rescue] resources in conducting searches and to assist [Transport Canada] in aviation safety and related accident prevention activities."[119] CASARA consists of 2,596 certified pilots, navigators, and spotters, and 375 privately owned aircraft.[120] CASARA is managed and directed by Director Canadian Air Force Readiness, is funded by both the Department of National Defence [sic] (DND)/Canadian Forces (CF) and Transport Canada (TC), and is tasked by the three regionally-focused national Joint Rescue Coordination Centers (JRCC).[121] CASARA is a single organization and provides all volunteer aviation support to the Canadian government through thirteen provincially/territorially aligned "zones." While funded from its two primary customers (DND/CF and TC), CASARA is trained and managed by Canada's aviation experts in the Canadian Air Force (a sub-agency of DND/CF), and tasked by centralized SAR-focused national rescue coordination centers. The Canadian Coast Guard (CCG) also has an all-volunteer Auxiliary component, similar to the U.S. Coast Guard. The difference is the Canadian Coast Guard Auxiliary (CCGA) has no aviation component. CASARA provides volunteer aviation support in both inland and coastal/maritime environments.

All three of these volunteer aviation organizations have virtually identical mission tasking and membership demographics. However, CASARA and CAP are programmatically overseen by incorporated full-time aviation professionals (long-term career civilian managers) and funded by their respective nation's Air Force, while the

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[119] Canadian Department of National Defence/Canadian Forces, Chief Review Services, "Summative Evaluation of the Contribution to the Civil Air Search and Rescue Association–CASARA (1258-144-2 CRS," April 2009, ii/iii http://www.crs-csex.forces.gc.ca/reports-rapports/2009/124P0864-eng.aspx.

[120] Civil Air Search and Rescue Association, "Who We Are," http://www.casara.ca/.

[121] Canadian Department of National Defence/Canadian Forces, Chief Review Services, "Summative Evaluation of the Contribution to the Civil Air Search and Rescue Association–CASARA (1258-144-2 CRS," 3/19.

Auxiliary aviation program is more of a footnote to a maritime-focused military service, the Coast Guard, and managed by (transient) active duty Coast Guard personnel who typically are not aviators. In Canada, there is never a doubt as to whom to contact when volunteer resources are appropriate for a mission; CCGA provides boats and boat crew personnel, and CASARA provides aircraft and aircrew personnel. In the U.S., depending on the circumstances—and who received the call—either CAP or Auxiliary aviators could be tasked.

The Coast Guard and the Air Force share the nation's Search and Rescue (SAR) responsibilities. The "National Search and Rescue Plan for the United States—2007" divides the U.S. into three regions: The Air Force is the SAR coordinator for the aeronautical Search and Rescue region corresponding to the continental U.S.; Pacific Command—the Air Force indirectly—is responsible for Alaska; the Coast Guard is the SAR coordinator for the aeronautical Search and Rescue region of Hawaii and the U.S. "maritime regions."[122]

The Coast Guard conducted 20,510 SAR cases in FY 2011 (October 01, 2010—September 30, 2011).[123] During that same FY 2011 time period, the Coast Guard Auxiliary aviation component reported assisting in 174 SAR cases.[124] Therefore, the Auxiliary aviation program participated in 0.83% of all Coast Guard SAR during FY 2011. The Air Force recently reported that the CAP performed "…90% of continental U.S. inland search and rescue missions as **tasked** by the AFRCC [Air Force Rescue Coordination Center]…" during 2011 (it is unclear whether that represents FY or calendar year). Note: This differs slightly from the 85% reported by CAP. Actual mission

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[122] United States Coast Guard, "The National Search and Rescue Plan of the United States–Updated 2007," U.S. National Search and Rescue Committee Interagency Agreement, 2007, 7, http://www.uscg.mil/hq/cg5/cg534/manuals/Natl_SAR_Plan(2007).pdf.

[123] U.S. Coast Guard, "United States Coast Guard Fiscal Year 2011 Performance Report," December 2011, 27.

[124] AUXDATA, Online Database. Auxiliarist activity is recorded through a Coast Guard owned internet-interfaced program called AUXDATA. AUXDATA forwards reported information, scrubbed of any personal information, to another internet-based program called AUXINFO. Anyone can access the U.S. Coast Guard Auxiliary statistical information captured in AUXINFO at https://www.auxinfo.uscg.gov/cognos/cgi-bin/upfcgi.exe .

numbers were not reported.[125] However, AFRCC reports that the average overall number of annual missions tasked between 2001 and 2010 was 2,309.[126] Therefore, one can estimate that CAP was likely tasked with approximately 90% of them, or 2,078 SAR cases during 2011—twelve times as many cases, and 108 times the comparative percentage of SAR tasking as Coast Guard Auxiliary aviators.

The Coast Guard database Patrol Order Management System, which is used to reimburse volunteer patrol expenses, indicates 20,757 hours of actual aircraft operation during FY 2011.[127] Additionally, Auxiliary aviation program members logged 50,167 volunteer-hours in FY 2011 (this figure reflects the fact that there is often more than one person aboard an aircraft and also includes non-airborne program-related hours). Of those volunteer-hours, 24,090 were reported as SAR Stand-by (on-call but not performing any duties); 750 volunteer-hours were spent actually performing the reported 174 SAR cases. Another 18,699 hours were reported as "Maritime Observation Mission" (MOM).[128] MOM is what it implies, a non-specific general observation mission. Auxiliary aircraft are standard, privately owned, civil aviation platforms with no imaging or observation-improving technology other than the cameras and binoculars a volunteer may carry with him/her aloft—unless a volunteer installs a technology package at his/her own expense. If one were to remove the SAR stand-by hours, MOM represents 72% of the Auxiliary aviation program activity. Seventy-two percent of the Auxiliary volunteer time is spent "generally observing"—at great expense to the government—with reportedly limited tangible returns.[129] Four other missions, "logistics, training, marine safety, and ice reconnaissance" round out the remaining 7,300 hours.[130] Worth noting, Auxiliary

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[125] 1st Air Force, "Civil Air Patrol, CONR Converge for Conference," January 23, 2012, http://www.1af.acc.af.mil/news/story.asp?id=123287077.

[126] 1st Air Force, "Air Force Rescue Coordination Center, 2010 Annual Report," (n.d.), http://www.1af.acc.af.mil/shared/media/document/afd-110421-016.pdf, 5.

[127] Timothy J. Hudson, e-mail message to author, March 12, 2012.

[128] AUXDATA, Online Database.

[129] First-hand reporting through personal conversations between numerous Coast Guard pilots and the Author. Various Dates between September 2009 and February 2012.

[130] AUXDATA, Online Database.

aviation assets are regularly used by Coast Guard Flag Officers as "shuttles" to various locations. These hours are not directly captured as a category and are otherwise reported as other operationally oriented mission hours.[131]

Auxiliary aviation program members and their aircraft are administratively attached to a local Auxiliary "flotilla," a grouping of typically twenty to thirty members. There are over 1,000 flotillas nationwide, of which only several dozen include Auxiliary Aviation participants.[132] Their operational tasking and oversight is provided by the nearest of 18 Coast Guard air stations. There is no Auxiliary aviation program in Alaska.

The CAP maintains 550 corporately owned, federally funded, civil aircraft for its volunteers to operate. Many of these platforms are fitted and equipped with advanced surveillance and communication equipment such as 100 "Advanced Digital Imagery Systems," and 15 "geo-referenced hyperspectral and panchromatic imagery systems."[133] These systems are supported and maintained by a fully staffed "CAP National Technology Center."[134] There are approximately 1,600 CAP units, located throughout the nation—including Alaska and Hawaii. CAP receives operational tasking (only) from the CAP National Operations Center (NOC) located at Maxwell Air Force Base, Alabama.[135]

Referring to previously presented information, of the Department of Homeland Security's FY 2012 $57.0B budget; the Coast Guard's portion was $6.2B. Of that, $17.4M was allocated to the Auxiliary program.[136] In relative terms, 0.25%, or $1 out of every $392 funded to the Coast Guard supports its volunteer program. Of the Auxiliary program funding, approximately one-sixth, or $3.2M, is expended to support the aviation sub-program; this figure includes $1.0M Aviation SAMA, which presently is not funded

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[131] First-hand reporting through personal conversations between several Coast Guard regional Directors of Auxiliary and the Author. Various Dates between September 2009 and February 2012.

[132] AUXDATA, Online Database.

[133] Civil Air Patrol, "Civil Air Patrol CAPabilities Handbook, Revision 2," August 1, 2010.

[134] Civil Air Patrol National Technology Center, "What is the National Technology Center?" (n.d.), https://ntc.cap.af.mil/whatis.htm.

[135] U.S. Air Force Archive, "Civil Air Patrol Fact Sheet," (n.d.), http://web.archive.org/web/20080409162942/http://www.af.mil/factsheets/factsheet.asp?fsID=163.

[136] U.S. Coast Guard, Auxiliary Division (CG-BSX-1), "USCG AUX-101 Brief 03Jan12".

in the Auxiliary program's base budget.[137] There are 74 active duty and civilian Coast Guard members managing the entire Auxiliary, seven at Coast Guard headquarters and 67 at 14 different regional offices. Management of the aviation sub-program amounts to an average of about five to 6% of each member's duties. There are no full-time employees dedicated solely to the aviation sub-program.[138]

Budget figures from FY 2010 (the most recent data available) indicate that the entire Department of Defense budget was $533.8B.[139] Of the Air Force's $115.6B portion, $26.6M was allocated to the CAP program.[140],[141] In relative terms, 0.023%, or $1 out of every $4,346 funded to the Air Force, supports its volunteer program. The Civil Air Patrol is managed by 116 active duty and civilian Air Force members and 100 members of the Civil Air Patrol non-profit corporation.[142]

Similar to the U.S., Canada divides national SAR responsibilities into three regions. Unlike the U.S., Canadian SAR is managed by three central Joint Rescue Coordination Centres [sic] (JRCCs). The JRCC Commander is tasked to decide how to respond to a situation. If a surface asset (boat) is the appropriate response platform, he/she will direct a CCG or a volunteer CCGA asset. If an aviation asset (aircraft) is appropriate, he/she will direct a CF or a volunteer CASARA asset. Maritime responses that require aviation assets are not necessarily tasked to CCG.[143]

The CCG is responsible for the same safety and environmental protection missions as the U.S. Coast Guard, and is generally similar in organization and structure.

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[137] This data was collected from multiple internal funding source documents maintained at Coast Guard Headquarters, Washington, DC.

[138] U.S. Coast Guard, Auxiliary Division (CG-BSX-1), "USCG AUX-101 Brief 03Jan12".

[139] U.S. Department of Defense, "DoD Releases Fiscal 2010 Budget Proposal," May 7, 2009, http://www.defense.gov/releases/release.aspx?releaseid=12652.

[140] USAF, "Air Force Fiscal 2010 Budget Reflects Rebalanced Priorities," May 7, 2009, http://www.af.mil/news/story.asp?id=123148160.

[141] Civil Air Patrol. "2010 Financial Report," (n.d.), http://www.capmembers.com/media/cms/Financial_Report_2010_LowRes_C911D953E9717.pdf.

[142] USAF, "Factsheets: Civil Air Patrol."

[143] Canadian Department of National Defence/Canadian Forces, Chief Review Services, "Evaluation of the CF/DND Component of the National Search and Rescue Program (1258-159 CRS)," January 2008, 4/15–8/15, http://www.crs-csex.forces.gc.ca/reports-rapports/2008/135P0785-eng.aspx.

However, the CCG is not considered a military service; it does not perform any law enforcement, and its members are non-military civil servants. The Royal Canadian Mounted Police, using CCG platforms, are Canada's territorial maritime law enforcers.[144] The CCG, which is under the federal department "Fisheries and Oceans Canada," has a comparatively small aviation component of 22 helicopters.[145]

The CCGA parallels the U.S. Coast Guard Auxiliary in its support for its parent agency. The CCGA focuses its members' efforts on maritime SAR. With 4,000 members and 1,133 vessels, CCGA reported conducting 1,741 SAR missions in 2010.[146] That represented approximately 25% of the CCG's 6,935 SAR missions.[147] The CCGA has no aviation program.

In 2004, CASARA flew182 assigned missions, or 26% of all JRCC air tasking.[148] In 2007, CASARA contributed 625 of 3,079 (20%) of all SAR flight hours in Canada (the CF flew the other 80%).[149] The DND budget for FY 2008/09 was $16.2B (CAD).[150] A Canadian government study went on to state:

> The DND SAR-related program cost in FY 2007/08 was $111,854,136. In addition to the $112 million, DND's portion of the federal contribution to CASARA during this same period was $2,206,700. This means that the CASARA contribution represents 1.9% of DND's program costs for SAR.[151]

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[144] Canadian Coast Guard, "Maritime Security," (n.d.), http://www.ccg-gcc.gc.ca/eng/CCG/Maritime-Security/Support_on-water_law_enforcement.

[145] Canadian Coast Guard, "Helicopter Services Across Canada," (n.d.), http://www.ccg-gcc.gc.ca/eng/CCG/CCG_Helicopters.

[146] Canadian Coast Guard Auxiliary, "Canadian Coast Guard Auxiliary Annual Review 2010."

[147] Canadian Coast Guard, "2009–2010 Fleet Annual Report–Serving Citizens Safely," (n.d.), http://www.ccg-gcc.gc.ca/e0015221.

[148] Canadian Department of National Defence/Canadian Forces, Chief Review Services, "Evaluation of the CF/DND Component of the National Search and Rescue Program (1258-159 CRS)," 7/15.

[149] Canadian National Search and Rescue Secretariat, "Reports," (n.d.), http://www.nss.gc.ca/site/reports/nsp/AnnualReports-Rapportsannuel/2007-2008/NSP-2007-08AnnualReport_2-0_e.asp.

[150] Ceasefire Insider, "The 2007 Budget and Military Spending," March 20, 2007, http://ceasefireinsider.wordpress.com/2007/03/20/the2007-budget-and-military-spending/.

[151] Canadian Department of National Defence/Canadian Forces, Chief Review Services, "Summative Evaluation of the Contribution to the Civil Air Search and Rescue Association–CASARA (1258-144-2 CRS," 12/19.

This mini-study has presented a number of data points and statistical information. It is organized in Table 8 for simplified review and consideration.

	CASARA	CAP	AUX Air
Adult Members	2,596	31,000	606
Aircraft	375 privately-owned	550 corporately-owned	206 privately-owned
Membership Units	13 (each province/territory)	1,600	~50
Annual Mission Hours	*(Not identified)*	111,000	20,757
Annual SAR Missions	182	*(Not identified)*	174
% Military Asset SAR Missions Avoided/Assisted	20–26%	90%	0.83%
# Tasking Sources	3 JRCCs	1 CAP NOC	18 CG Air Stations
Program Budget	$2.18M $2.2M (CAD)	$26.6M	$2.9M
Cost Per Mission Hour	"$273.98" "$276.72 (CAD)"[152]	"$120-$160"[153]	$139.71 (mission hrs/budget)
Cost Per SAR Mission	$11,968" $12,088 (CAD)	Unknown	$16,667
% of Funding Department Budget	~0.014% of DND/CF "1.9% of CF SAR budget"	~0.005% of DoD ~0.023% of USAF	~0.005% of DHS ~0.047% of USCG

*Unless otherwise noted, the above information was cited earlier in this section.

Table 8.   Depiction of Volunteer Aviation Program Statistics

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[152] Canadian Department of National Defence/Canadian Forces, Chief Review Services, "Summative Evaluation of the Contribution to the Civil Air Search and Rescue Association–CASARA (1258-144-2 CRS," 11/19.

[153] John Desmarais, Deputy Director of Operations Civil Air Patrol, Fact Sheet. Presented during briefing at U.S. Coast Guard Headquarters. March 1, 2012. Because two of CAP's three missions relate to cadet training and aerospace education, only a portion of the budget is devoted to actual aviation mission support.

Canada is a nation of approximately 34.2 Million people.[154] Contrasted to the United States population of approximately 308.7 Million, Canada's population is about 11% of the U.S. population.[155] Canada has a similar ratio of aviation-oriented adult volunteers (approximately 8% of the combined CAP and Auxiliary Aviation membership). While both nations are of relatively similar size in landmass, Canada has 10 times the coastline as the U.S.[156] Much of Canada's coastline is located in the Nation's sparsely populated arctic region. Nonetheless, Canada has a significant maritime coastal region requiring search and rescue response capabilities.

The Canadian Dollar, in recent years, is very close in value to the U.S. Dollar. As of March 11, 2012, $1.00 (U.S.) exchanged for about $1.01 (CAD). So, it is reasonable to assess the relative organizational costs similarly. As shown in Table 7, despite the fact that the U.S. outspends Canada 30:1 on its military, Canada provides almost three times the organizationally proportional financial support to its volunteer aviator program. A closer look at the data shows the significantly larger CASARA cost per mission hour (approximately double) is countered by the smaller cost per SAR mission. One explanation for this could be that CASARA personnel fly fewer mission hours than their American counterparts, but more of their missions were oriented toward actual SAR response.

It is also important to keep in mind that members privately own CASARA aircraft. The comparatively robust financial support (including personal expense reimbursement) for actual SAR missions appears to ensure that the aircraft owners continue to volunteer their time and aircraft—at a cost savings to the Canadian taxpayers. While CAP corporately owns almost all of its aircraft, it does have provisions to permit (and reimburse) members to use privately owned aircraft. At CAP discretion, some Coast

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[154] Statistics Canada, "Canada's Population Estimates," March 24, 2011, http://www.statcan.gc.ca/daily-quotidien/110324/dq110324b-eng.htm.

[155] U.S. Census Bureau, "2010 Census Data," (n.d.), http://2010.census.gov/2010census/data/index.php.

[156] Wikipedia, "List of Countries by Coastline," (n.d), http://en.wikipedia.org/wiki/List_of_countries_by_length_of_coastline.

Guard Auxiliarists could continue to fly their same aircraft under CAP oversight and support and others could train and qualify to fly and continue their volunteer service aboard CAP-owned aircraft.

APPENDIX C. COMPILATION OF RESEARCH FINDINGS PRESENTED IN CHAPTER IV

A.   AUXILIARY MEMBERSHIP

- Finding #1. Auxiliary membership numbers increase and decrease over time; Auxiliary membership is generally smaller than the past 40 years, but larger than the 30 years before that. National events and Coast Guard policies can be found to negatively impact membership over the short term. However, those negative impacts are temporary; volunteer interest remains and new members are regularly recruited.

- Finding #2. Volunteer membership in the Auxiliary has been generally independent of the trends in national recreational boating registrations. Since 2007, Auxiliary membership has grown despite declines in boating and boat sales.

B.   AUXILIARIST PARTICIPATION

- Finding #3. The average duration of Auxiliary Aviation missions is in decline while the duration of all other missions is relatively constant.

- Finding #4. The number of operational hours served and missions performed in Surface and Air Operations Support is increasing despite a general decline in the number qualified participants. Fewer qualified volunteers are reporting more hours and missions.

- Finding #5. The relatively constant 50-year declining trend in the number of surface facilities (boats) is independent of national retail powerboat sales and Coast Guard financial support (SAMA).

- Finding #6. The offering of aircraft for use as Auxiliary facilities is largely dependent on the degree of Coast Guard financial subsidization (SAMA) and maintenance requirements (TBO).

- Finding #7. There has been a three-fold increase in the presence of aircraft as a percentage of all operational facilities since the institution of aviation SAMA in 1997.

C.   AUXILIARY DEMOGRAPHICS

- Finding #8. The membership of the Auxiliary is primarily older and White.

- Finding #9. The American White population representation is decreasing while the three largest American non-White minorities are growing. The American Hispanic population representation, which is already the largest minority represented in the Auxiliary, is growing rapidly.

D.   AUXILIARY RESOURCING

- Finding #10. Auxiliary membership administration, the overhead expense for managing the organization, consumes approximately half of the direct resourcing of the Auxiliary program.

- Finding #11. The direct funding of the Auxiliary program, when adjusted for inflation, has progressively decreased since an infusion immediately following 9/11.

E.   AUXILIARY PROGRAM RETURN ON INVESTMENT

- Finding #12. Auxiliary operational activities—with the exception of Air Operations Support—offer significant measured outcomes at minimal per unit expense to the Coast Guard, and have a positive volunteer involvement return on investment.

- Finding #13. Air Operations Support has limited measured outcomes and a negative volunteer involvement return on investment, yet consumes 12.7% of Auxiliary programmatic resourcing.

F.   RESOURCE-NEUTRAL POLICY OPPORTUNITIES

- Finding #14. The Civil Air Patrol is capable of providing volunteer aviation services to the Coast Guard at an as-needed hourly rate comparable to those provided by the Auxiliary Aviation sub-program.

- Finding #15. The Auxiliary program has under-funded demands in both general administration and operational programs that could immediately use any and all funds reprogrammed from elsewhere within the program.

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