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A STUDY TO IDENTIFY THE COURSE TASKS FOR A U.S. COAST GUARD RESCUE COORDINATION CENTER CONTROLLER EXPORTABLE REFRESHER TRAINING COURSE

A Research Paper
Presented to the Graduate Faculty
of the Department of Occupational and Technical Studies
at Old Dominion University

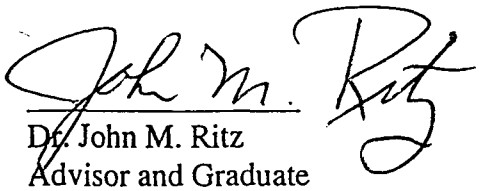
In Partial Fulfillment
of the Requirements for
the Master of Science in Instructional Technology Degree

By
Richard L. Arnold
July, 1995

APPROVAL PAGE

This research project was prepared by Richard L. Arnold under the direction of Dr. John M. Ritz in OTED 635, Methods of Research in Vocational Education. It was submitted to the Graduate Program Director as partial fulfillment of the requirements for the Degree of Master of Science in Instructional Technology.

Approved By:



Dr. John M. Ritz
Advisor and Graduate
Program Director

Date: 7-29-95

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CHAPTER I
INTRODUCTION

"That Others Might Live". The altruistic motto of the U.S. Coast Guard's National Search and Rescue (SAR) School located at Yorktown, Virginia, greets a visitor or trainee the moment they step through the school's door. However, it is much more than a motto to the people who work and train there. The Coast Guard, by statutory law and international agreement, rescues and assists persons and protects property (Maritime SAR Planning Course Notebook, 1994, p. 14-1). The men and women who perform this demanding mission are guided by controllers trained at Yorktown. They work in Rescue Coordination Centers (RCC's) scattered throughout the country (Appendix A shows RCC locations and areas of responsibility). Controllers vector searchers, arrange for resources and make key response decisions, decisions that can literally mean life or death to people in peril at sea.

Saving lives and protecting property is both an art and a science relying greatly on the training, creativity, judgment, and experience of the people involved (National SAR Manual, 1991, p. v). SAR is an art because controllers must call upon their own experience, judgment, professional skills, and mental abilities to make the right decision at the right time. It is also a science since oceanic rescue planning calls for the ability to manipulate mathematical drift models and computer based support systems. Practitioners of this esoteric craft receive detailed performance oriented training at the National SAR School's Maritime Search and Rescue Planning Course. Graduates complete practical and written examinations to verify they can perform their duties in accordance with governing directives (Curriculum Outline for Maritime SAR Planning Course, 1991, p. 4).

Surveys of course graduates and their supervisors indicate that post-graduate training is needed to ensure RCC controllers can continue to perform the the course tasks mastered at Yorktown (Table I). However, the school does not have a refresher

controller training program. This study will help the school determine Maritime SAR Planner course tasks that require refresher training.

Table 1 (Maritime SAR Planner Course, Current Course Tasks)

TASK	TASK	TASK	TASK
Determine Datum	Determine Search Area Radius	Plan Drift Comp. Search Patterns	Provide Public Affairs/Media Briefs
Determine Datum Minimax	Describe Search Area	Maintain Case Documentation	Brief Superiors
Determine Successive Datums	Employ CASP	Write Situation Reports (SITREP)	Obtain Resources From Other Agencies
Calculate Reversing Tidal Current	Select Search Pattern	Write SAR Action Plan	Interview Respondents
Compute Sea Currrent	Compute Sweep Width	Plan Medical Evacuations	Plan or Assist in Inland Searches
Compute Wind Driven Current	Compute Coverage Factor and POD	Evaluate Legal Aspects	Prosecute Flare Sightings
Calculate Leeway	Allocate Effort	Casp Weights	

Statement of the Problem

The problem of this study was to identify the course tasks for a Coast Guard Rescue Coordination Center controller exportable refresher course.

Research Goals

The primary goal of this research study was to provide the National SAR School with sufficient data and general information to prepare a controller refresher training course. Contributing goals were:

1. Identify the course tasks that require training.
2. Identify any new course tasks that require initial training.
3. Prepare a list of refresher course tasks.
4. Determine the recommended training format for the refresher course.

5. Prepare the foundation for the creation of the refresher training course.

Background and Significance

RCC controllers must be fully capable of performing their responsibilities. They are required to be thoroughly familiar with the National SAR Manual, local SAR plans, and the communications capabilities and geography in their area of responsibility. Controllers are also required to maintain an effective and efficient watch and be able to rapidly perform all functions required, often without complete information or advice from seniors (National SAR Manual, 1991, p. 1-7).

Currently, on-the-job and refresher training to ensure controllers can "perform all functions required" is left to the parent RCC. Survey results indicate that some complex and infrequently used (but key) skills acquired at the school require additional training after the graduate returns to the RCC. Adults typically improve their ability to retain and integrate new and complex information when they receive follow-up training, time to work on specific tasks related to the learned skills, and their supervisors are involved (Zemke, 1988, p. 61). Controllers should, if they are to retain and integrate their new skills, also receive focused training and time to integrate the knowledge after leaving Yorktown. RCC feedback supports this general contention. Recurrent SAR Controller training was of sufficient importance that it was a primary agenda item for the 1995 Search and Rescue Workshop (Atlantic Area Notice 16100, 1995, pp. 7-8). The RCCs find themselves riding in the same boat as the rest of the Coast Guard. Unit-level instruction is often neglected and few exportable refresher training programs exist throughout the Coast Guard (Coast Guard Research and Development Center, 1994, p. 15).

Conducting an accurate needs analysis is a crucial first step in creating successful learning programs (Knowles, 1980, pp. 27, 93 and Hart, 1987, p. 474). Accurate,

measurable course tasks that result from this study will enable the refresher course designer to create a program that will address the controller's ongoing training needs (Broadwell, 1993, p. 79).

Limitations

This study is reliant on surveys completed by RCC controllers and their supervisors. It was impractical to conduct on-site interviews due to the geographic separation of the RCCs and the irregular hours maintained by their staffs. However, confirmation of initial survey data was performed by distributing follow-on surveys to RCC controllers at the 6 - 9 March, 1995, National SAR Conference held at Williamsburg, Virginia.

Although some civilian agency representatives attend the course, most attendees and graduates are members of the Coast Guard and are mid-level to junior personnel with at least some prior experience or exposure to search and rescue missions. Other pertinent demographic information is described in Chapter IV.

The school does not have the staff to regularly send instructors to hold on-site refresher training. RCCs can ill afford to send their controllers back to Yorktown for refresher training due to RCC staff size (D. P. Rudolph, Interview, January 18, 1995). Both limitations indicate that a distance learning format may best serve the Coast Guard's needs for controller refresher training.

This study is based on the current National SAR School curriculum and does not take into account any curriculum changes made subsequent to the initial or follow-up surveys. Refresher training programs developed by individual RCCs were not available for review. However, individual RCC refresher training programs, if any exist, are not currently used by the SAR School or any other Coast Guard organization that supervises or performs SAR training.

Assumptions

Several assumptions regarding graduates of the National SAR School's Maritime Planning Course, their supervisors and RCC controllers were made during this research project. They are supported by personal interviews conducted throughout the project. Key assumptions were:

1. RCC controllers successfully completed the requisite practical and written examinations to graduate from the National SAR School (Curriculum Outline for Maritime SAR Planning Course, 1991, p. 4).

2. RCC supervisors are Coast Guard maritime SAR subject matter experts. They have extensive background in SAR and RCC operations.

3. Only RCC controllers, their immediate superiors and SAR School staff completed course task surveys.

4. Controllers and their supervisors understood the survey questions and the related course tasks described in the surveys. Survey respondents answered truthfully.

5. Controllers and their supervisors would view a carefully designed refresher training program as a positive development and career enhancing program provided they were frequently consulted during the design process, course tasks would not vary widely from RCC to RCC, training was learner centered, usable and helped controllers address any training deficiencies (Clark, 1989, pp. 143-145).

Procedures

Three surveys were used as this research study's primary information collection tools. The first survey provided data on the ability of RCC controllers to perform course tasks six months after graduation from the National SAR School. Respondents answered three questions related to each course task's frequency, importance and adequacy. They were:

1. How often do you perform the task (frequency)?

2. How important is the task to the mission (importance)?

3. How adequate was training for the job (adequacy)?

The second survey collected input from National SAR School instructors regarding which tasks they felt needed to be included in a refresher course.

The third survey collected input from current RCC senior controllers who were attending the 1995 Senior Controller's Workshop in Williamsburg, Virginia.

All surveys reviewed the same course task list, although the first survey looked at the tasks regarding their frequency, importance and adequacy. The latter two surveys were used to provide exact feedback regarding which course tasks were most appropriate for inclusion in a refresher training program.

Course tasks for the resident course were determined and course graduates were identified. The school also provided assistance in conducting follow-on surveys to verify the course tasks noted in the initial post-training surveys.

Definition of Terms

The following terms may not be familiar to the general reader. For that purpose, a short definition is provided to aid the reader of this research study.

1. Area of Responsibility: Geographic area monitored by a specific RCC.

2. CASP: Computer Aided Search Planning tool used in open ocean search planning.

3. Coast Guard Institute: Coast Guard command that prepares correspondence courses for use by field personnel. The Institute prepares courses for advancement or as substitutes for resident courses. They are currently paper-based courses that include tests and instructional materials for self-study.

4. Computer-Based Training (CBT): Delivery of training and instruction via a computer. CBT can include graphics, video and textual information and permit a high degree of interaction with the learner.

5. Course Tasks: Those tasks which comprise the Maritime SAR Planners Course. The tasks stem from the terminal performance objectives approved by the U.S. Coast Guard.

6. ICSAR: Interagency Committee on Search and Rescue.

7. National SAR Plan: Interagency agreement that establishes a national plan for the coordination of SAR services to meet domestic needs and international commitments.

8. On-the-Job Training (OJT): Training carried out under the supervision of a qualified controller.

9. Rescue Coordination Center (RCC): Control and coordination centers with sufficient personnel, communications equipment, charts, and plotting equipment to manage SAR missions.

10. Rescue Coordination Center Controller (RCC Controller): RCC duty officer with operational authority to manage SAR cases. The Senior RCC Controller is typically tasked with the day to day supervision of the other controllers and is usually the most experienced SAR Controller at the RCC.

11. Resident training: Training programs that require the physical presence of the trainee away from his or her normal duty station.

12. Search and Rescue (SAR): Use of available resources to assist persons and property in actual distress.

13. SAR Mission: Any SAR incident involving the dispatch of SAR resources.

14. SAR Resources: Any organization or activity that can be used during a SAR mission.

15. Terminal Performance Objectives: Behavioral objectives that define trainee competencies that must be satisfactorily mastered to serve as a RCC controller. Course tasks are clustered to create the Terminal Performance Objectives (Maritime SAR Planning Course Notebook, 1994, p. iii).

Overview of Chapters

Chapter I outlined the purpose of this study and provided some general background about the Coast Guard's SAR responsibilities. RCC controllers trained at the National SAR School need follow-up training after graduation to help the Coast Guard meet those responsibilities. This study uses surveys of controllers and their supervisors and SAR School Intructors to identify the course tasks for a Coast Guard RCC controller exportable refresher course.

Chapter II is a review of applicable literature and supporting material. Chapter III includes the methods and procedures used to collect study information. Chapter IV details this research study's findings. Chapter V provides a summary, conclusions and recommendations for preparation of the National SAR School's refresher training course for RCC controllers.

CHAPTER II
REVIEW OF LITERATURE

Coast Guard SAR documents and surveys yielded sufficient pertinent information to meet the first three contributing research goals noted in Chapter I of this study. For the convenience of the reader, those goals were:

1. Identify the course tasks that require additional training.
2. Identify any new course tasks that will require initial training.
3. Prepare a list of refresher course training tasks.

Other sources, especially those centered around training and education, yielded sufficient pertinent information about on-the-job training (OJT), adult learners, and computer-based training (CBT) systems to complete the latter two contributing goals from Chapter I. Again for the convenience of the reader, those goals were:

4. Determine the recommended training format for the refresher course.
5. Prepare the foundation for the creation of the refresher training course.

The remainder of this chapter provides a short review of the information sources used to meet the goals noted above and support this study's findings, conclusions and recommendations. Coast Guard references related to the survey instruments are discussed in Chapter III.

Coast Guard Documents and Course Tasks

The governing directive for SAR in the United States is the National Search and Rescue Manual. The U.S. Coast Guard is responsible for promulgating and coordinating any changes to the manual and sponsoring the Interagency Committee on Search and Rescue (ICSAR). ICSAR is a standing federal committee that coordinates and develops National SAR policy, interfaces with other agencies that participate in emergency services, and develops compatible SAR procedures and equipment. ICSAR and the Coast Guard

use the manual for civil SAR operations and training (National SAR Manual, 1991, pp. iv-v).

The Coast Guard also maintains a special addendum to the manual (other armed services and key agencies have their own addendum). Both the SAR Manual and the Coast Guard addendum require RCC Controllers to be fully qualified to perform their duties and both provide brief explanations regarding what "fully qualified" means (National SAR Manual, 1991, p. 1-7; Coast Guard Addendum to the National SAR Manual, 1991, pp. 1-2 - 1-3). It is no surprise that controller qualifications are stressed early in the manuals. Controllers often make the critical first decisions that can either dramatically increase the probability that aid will reach mariners in distress, or if the controller errs, result in a loss of life or property. In summary, a fully qualified controller must:

- Be thoroughly familiar with the National SAR manual, the Coast Guard Addendum to the Manual, local SAR plans, communications capabilities and geography in the RCC's area of responsibility.
- Maintain an effective and efficient RCC watch, including the ability to rapidly complete all required SAR tasks without necessarily having access to all needed or desired information or the advice of seniors.
- Understand how to access potential SAR organizations including appropriate Coast Guard units, law enforcement organizations, civilian agencies, other military services and commercial sources.
- Accurately and rapidly perform SAR incident analysis, search planning, and SAR mission management.
- Successfully complete the National SAR School's Maritime Search Planning Course. Prospective controllers who are assigned to the RCC but waiting for openings at the school must be closely supervised in an OJT program and enroll in the Coast Guard Institute SAR Course.

Trainees at the Maritime SAR Planning Course are required to successfully meet Coast Guard approved terminal performance objectives to graduate. Lectures, exercises and simulations organized into 26 critical course tasks enable the trainees to meet the objectives. The objectives are reviewed at least once every three years, whenever a major curriculum change occurs, or when requested by appropriate Coast Guard organizations (Curriculum Outline for Maritime SAR Planning Course, 1991, pp. 4-24).

The school also regularly evaluates the course via survey. Surveys are sent about six months after each class graduates to determine if controllers receive adequate skills training, if the course is compatible with RCC requirements and needs, to exchange information with SAR program managers and to assess the need for continued training (Reserve Training Center Yorktown External Evaluation Policy, 1991, pp. 1 - 1-3).

Current RCC On-the-Job Training

Continued training after the new controller graduates is usually performed at the RCC level in the form of an OJT program. The National SAR School does not have sufficient staff or funding to regularly send instructors to RCCs to conduct tailored training. RCCs are usually unable to send controllers back to Yorktown for any additional training due to demanding watch schedules, funding, and quota availability (D.P. Rudolph, Interview, January 18, 1995).

SAR School's inability to regularly support continued training at the RCCs is an example of a greater Coast Guard problem. Commander Mark Landry, a Coast Guard staff member of the Naval Command and Staff College, recommended that the Coast Guard review whether the highly technical skills required of modern workers can be adequately addressed by the current training system. He suggests that the Coast Guard should "embrace technology as the only means of surviving budgetary restraints" (Landry, 1994, p. 74). Commander Landry is not alone. A Coast Guard sponsored training

techniques and technology study found that most Coast Guard programs rely on paper-based correspondence courses (a poor solution to training problems in today's technologically oriented work-place), some mobile training/standardization teams, and occasional access to resident facilities or instructors. The report noted that few Coast Guard units or programs ever receive organized, standardized refresher training after completing a resident program. The study also noted several key consequences of the Coast Guard wide refresher training problems. Three are particularly germane to RCC training difficulties (Coast Guard Research and Development Center, 1994, pp. 14-16). They are:

1. Remedial or refresher training is usually performed by a competent worker who may not be a competent trainer. RCC staff are chosen primarily for their professionalism, judgment, and operational expertise, not their training skills.
2. Instructional content is without quality control and may be inconsistent among the centers. Consequently, watchstanders at one RCC may receive different training than another watchstander at a different RCC, even if local area of responsibility differences do not impact the topical area.
3. Demanding RCC watches may leave little time for the more experienced controllers to perform comprehensive OJT for their juniors. Although a new controller is in effect experiencing a real-world lab, some critical skills that are rarely or infrequently used may receive little attention in the training program. Watch rotations may preclude the novice controller from learning material from the best subject matter expert at the unit.

Controllers are typically immersed in an intensive OJT program after they return from the Maritime SAR Planning course. SAR School surveys typically arrive shortly after or during the final phases of the qualification period. RCCs call upon various locally developed training and qualification programs to reinforce SAR School training and educate new controllers about local SAR plans, the local geography and other skills

needed for their area of operations. Participation in an OJT program after graduation is valuable to ensure controllers reap the maximum benefit from the resident training. Controllers should be able to improve their ability to retain and integrate material learned at SAR School with the material pertinent to their local areas and RCCs, if they receive quality follow-up training, time to work on specific tasks related to the learned skills, and their supervisors are involved (Zemke and Zemke, 1988, p. 61).

The 1995 Senior Controller Conference training working group (the researcher was the group's recorder) noted that a wide range of controller expertise and a variety of locally developed unit training programs exists in the field. The group recommended that the Coast Guard create a training system that will capture controller expertise and enable RCCs to uniformly train and test watchstanders at the job site (FY 95 SAR Workshop Results, Agenda Items 06 - 09, 12).

A refresher course cannot reasonably capture all of the unique training requirements for each RCC. However it could, if based on validated course tasks, give controllers a structured OJT program that can boost expertise, track qualifications progress, and ease watchstander training burdens.

What Makes a Good On-the-Job Training Program?

Most companies use some form of OJT (McCord, 1987, p. 363). However, OJT can be informal or very structured. Formal training in the workplace, including OJT, is on the rise and has increased 45 percent from 1983 to 1991 (Carnevalle and Carnevalle, 1994, p. 22). The Carnevalle's observed that training was increasing to meet the demand of a labor force that has more managers, is more professional and is dealing with increasingly technological work. Controllers are also dealing with increasingly technological work. Minimum staffing standards, reliance on technology in the form of specialized computer aids, advanced communications equipment, new data management systems and remote

sensing all combine with the gravity of saving lives to make the SAR Controller's job very demanding. RCC Controller OJT programs need to be structured and effective.

Nelson presented an overview of structured and effective OJT programs at the 1995 *Training Magazine* Training Conference and Expo. Based on Nelson's criteria, a structured OJT program for controllers should be conducted at the RCC. The program should capture the knowledge of experts, be systematic, and rely on performance based methodology. Trainees should receive one-on-one instruction or be trained in very small groups (Nelson, 1995, p. 389). Structured OJT can be a useful tool to "bring an employee from entry level to mastery, to overcome skill deficiencies, to strengthen a formal training program, and to upgrade an employee's skill for job enlargement" (McCord, 1987, p. 364).

Also based on Nelson's criteria, a structured controller OJT program could be effective because RCC watchstanders have skills that require either a high degree of training or frequent improvement, their current OJT programs may be haphazard or inefficient, RCCs have a high rate of turnover (like most military organizations), and resident training takes controllers away from critical jobs for unacceptably long periods of time (Nelson, 1995, pp. 389-390).

Designing Successful Training Programs

Broadwell outlined seven steps for creating and conducting successful training programs (1993, pp. 75-81). They included:

1. Conduct a thorough needs analysis to identify organizational deficiencies, analyze the potential for training to overcome the deficiencies and assess trainee willingness and ability to learn the material.

2. Prepare a clearly written set of behavioral objectives that enable trainees, their supervisors, and the program managers to understand what the program will cover.
3. Develop the curriculum. Training should focus on the knowledge and skills needed to master the performance objectives.
4. Determine the delivery method, job aids, and other training materials. Learning should be purposeful and actively involve the trainees.
5. Develop a program agenda that delineates where and for how long the program will run.
6. Conduct the training using the performance objectives. Keeping training focused on the objectives will ensure the program stays on track.
7. Evaluation. Evaluate the program's effectiveness in translating the learning to improved workplace skills. Were the trainees able to perform the objectives? Were deficiencies identified in the needs analysis addressed?

Although other researchers, trainers and educators may organize their course preparation steps differently, most address the same basic elements used in Broadwell's seven steps. Some amplifying examples follow.

Conducting an accurate needs analysis is a crucial first step in creating successful learning programs (Knowles, 1980, pp. 27, 93; Hart, 1987, p. 474). Bennett and Clasper define a need as "a measurable outcome discrepancy" and needs analysis as "the collection of data from groups and individuals involved in a specific training situation in order to determine if a training problem exists, the nature of the training problem, and to what degree it exists" (1993, p. 29.24).

A needs analysis element that is of particular interest when considering a technology-based delivery system is the potential system cost weighed against the potential savings and training improvement that might result from adopting the system. Technology based systems can improve training quality and save long-term costs. However, they can be very

costly in the short term and ineffective if poorly designed or applied to the wrong training problem (Hart, 1993, pp. 16.2 - 16.19; Campbell, 1993, pp. 11.1 - 11.11).

Broadwell placed great weight on ensuring that training programs address the wants and needs of adult learners. Other training experts consistently cite the need to take adult learning characteristics into account when designing training programs. Ron and Susan Zemke state that 80-90 percent of adults motivated to participate in training programs do so to gain knowledge or skills for which they have a use. They also typically need an active learning process to successfully integrate new knowledge and skills with the old (1988, pp. 58, 61). Adults who are involved in passive training (listening to lectures or reading texts) versus active learning typically forget 50 percent of the material within 48 hours and 25 percent more within two weeks (Randall, 1986, p. 1). Computers can deliver training that engages adults while also saving training time and dollars for sponsoring organizations.

Computer-Based Training

Addressing needs by using computer-based training (CBT) is gaining interest throughout the training community. CBT can increase the effectiveness and efficiency of instructional programs (Fletcher, 1992). Advanced CBT programs can "increase instructional productivity by reducing instructor dependency, enhancing consistency, stimulating learning processes, and improving learning retention" (Liedtke, 1993, p. 9). CBT can be an effective way to conduct training when:

- It is used to train large numbers of geographically dispersed learners.
- Training relies on expensive equipment that can be damaged or hurt trainees.
- Trainees will benefit from fast improvement.
- Long-term costs need to be reduced. CBT can save instructor and trainee travel costs and reduce course hours due to self-paced instruction.

- Training timeliness needs to improve to support worker productivity gains.
- Insufficient instructors are available to provide or manage training.
- Standardized delivery, feedback and trainee proficiency are desirable.
- An organization recognizes the value in providing tailored individual instruction.

(Callahan, 1985, p. 1; Hart, 1993, pp. 470 - 473).

Appropriate CBT programs can improve training and reduce costs. However, an organization must carefully analyze training costs and needs before adopting a CBT system.

Cost-Benefit Analysis for Computer-Based Training

Technology-based instruction "almost always involves significant design and development costs and major changes to the status quo" (Kearsley, 1993, p. 16.1). Organizations considering developing or using CBT delivery systems need to look at development time and cost and the potential impact the system may have on the organization. Typical development times and costs are noted in Table 2. One effective way to reduce long-term costs is to design the CBT system to meet more than one training need. Systems designed to this standard typically have embedded training modules, advisory/decision support systems and a knowledge base to enable the user to access pertinent information (Harbour, Byers, and Wilhelmsen, 1991, p. 11).

An Army Research Institute survey of 200 experienced CBT developers found that typical projects ranged from 140 to 316 development hours while more complex or unusual projects could range from 400 to 1,000 hours (Hassett, 1992, p. 42). Although figures vary, the important point is the significant time it takes to develop one deliverable hour of instruction. However, development time and cost can be recovered if the sponsoring organization has identified sufficient savings from reduced instructor/student travel and increased worker productivity. The cost benefit of multimedia CBT and its potential to increase worker productivity is important when one notes that interactive

multimedia CBT programs can reduce training time by about 30 to 50 percent, and increase retention by about 30 percent over traditional instructional methods (Hassett, 1992, p. 42; Magel, 1992).

Table 2. (Typical CBT Development Time and Costs per Delivery Hour)

	Mainframe CBT (Without Graphics)	Mainframe CBT (With Graphics)	Microcomputer CBT (Limited Graphics)	Microcomputer CBT (Extensive Graphics)
Senbetta Dev. Hours	No Entry	160 Hours	180 Hours	230 Hours
Hart Dev. Hours	40 to 100 Hours	100 to 300 Hours	50-200 Hours	100 to 500
Hart Dev. Cost	$2,300 to 5,600	$5,600 to 17,000	$2,800 to 11,200	$5,600 to 28,000

(Senbetta, 1992 and Hart, 1987, pp. 476 - 477).)

Summary

SAR Controllers are charged with the important task of protecting life and property at sea. They prepare for their duties by completing the Maritime SAR Planning course and their own RCC OJT program. However, the variance in OJT programs and limited opportunities for recurrent training can hamper a controller's ability to become or stay "fully qualified". Research indicates that controllers could benefit from a structured and effective OJT course. Further improvement might be realized by preparing the standard OJT course for delivery via a multimedia CBT system.

RCCs, unlike many other Coast Guard units, have state of the art commercially procured Pentium computers for conducting search planning and coordination tasks. A CBT system could dove-tail nicely with the tools and systems controllers are already using "on-the-job". Research indicates that technology-based training can, if properly designed, alleviate training burdens and reduce long-range costs. These benefits target two typical RCC problems with their current training system---instructor availability and minimum training funds. Finally, the Review of Literature indicates that succesful completion of this study can have a positive impact by contributing to the correction of a long-term RCC training deficiency.

CHAPTER III
METHODS AND PROCEDURES

The purpose of this study was to identify the course tasks for a Coast Guard RCC controller exportable refresher course. Research goals used to support this study also included determining a recommended training format for the course. Survey instruments were used to gather data from the National SAR School, RCCs, and supervising staffs to support these objectives. This chapter discusses the methods and procedures used to identify the course tasks and complete this study's research goals.

Population

Active duty Coast Guard personnel with maritime search planning responsibilities comprised the population of this study. Respondents in that population were further grouped into three stratified populations. They were:

1. Current RCC controllers who are recent graduates of the National SAR School and their supervisors (30 respondents).
2. National SAR School instructors (5 respondents).
3. Controllers at the Atlantic Area 1995 SAR Workshop (8 respondents).

It was assumed that the surveyed population was representative of the Coast Guard's maritime search planning community and would provide the researcher with valid data regarding maritime search planning and related training conditions at Coast Guard RCCs.

Instrument Design

SAR School standard external course evaluations were used to survey SAR School graduates and their supervisors. A similar instrument was used to gather information from school staff and workshop controllers . Key questions related to the resident course tasks were included in all surveys in order to determine their applicability for inclusion in a refresher course.

The SAR School's external surveys of course graduates and their supervisors queried respondents about each course task's importance, frequency of execution, and performance using a series of five point scales. Respondents to the school instructor and workshop participant survey made a value judgment (Likert scale) regarding whether each course task should be included in a refresher course. Survey data enabled the researcher to select the tasks that RCCs need the most training support in order to maintain controller proficiency. These tasks were prioritized for inclusion in a distance deliverable search planning refresher course. Appendices B and C are sample SAR School Course Graduate and Course Graduate Supervisor Surveys while Appendix D is a sample Instructor/Workshop Attendee Survey.

Supporting information was collected during interviews with SAR School staff, trainees, and current controllers. The researcher also collected pertinent supporting information from the training working group at the Atlantic Area 1995 SAR Workshop. Appendix E is a copy of applicable agenda item results from the workshop.

Methods of Data Collection

The researcher attended the Atlantic Area 1995 SAR Workshop and conducted several interviews with the SAR School staff to facilitate data collection. A short presentation was provided to workshop attendees and school staff outlining the project. Also, a brief explanation explaining the rationale for the study was included in the first page of each instructor/workshop attendee survey. Surveys were distributed and collected on the same day. SAR School graduate and supervisor surveys include an explanatory cover letter. They were mailed approximately six months after the trainees had returned to their RCCs and respondents were asked to complete and return the surveys within 15 days. Appendix F is an external survey cover letter. Although interviews were used to

gather initial information related to the topic and research goals, surveys were the primary tool used to gather course task information.

Statistical Analysis

Data was tabulated and analyzed in accordance with the goals noted in Chapter I. Course task selection was based on an averaged mean value computed for each task. Averaged course task means were computed by determining the mean for each course task for each stratified population. Course task selection criteria was based on the means, additional data from the SAR School graduate/supervisor surveys, and interviews. Survey data and computed means are included in narrative and tabulated form in Chapter IV.

Summary

This chapter discussed the methods and procedures used to gather data related to selecting the course tasks for an exportable RCC refresher course. Surveys were used as the primary data collection tool with supporting information from interviews-workshop results. Chapter IV provides survey results. Chapter V includes conclusions and recommendations based on those results.

CHAPTER IV
FINDINGS

The purpose of this research study was to identify RCC controller exportable refresher course tasks. Course tasks were identified by researching Coast Guard RCC controller task requirements and by surveying a population of forty-three Coast Guard maritime SAR experts. One hundred percent of the population responded. The population consisted of thirty Maritime SAR Planner Course graduates and their supervisors, five National SAR School instructors, and eight senior RCC controllers attending Commander, Coast Guard Atlantic Area's 1995 SAR Workshop. The number of respondents sufficiently represents the Coast Guard maritime SAR community given the small size of RCC and SAR School staffs.

Maritime SAR Planner Course Graduates and their Supervisors

Two similar surveys (Appendices B and C) were designed and distributed by the National SAR School in keeping with the requirements of RTC Yorktown's External Evaluation Policy. They were administered to Maritime SAR Planner Course graduates and their supervisors. Graduates and their supervisors evaluated twenty-six course tasks, critiqued training by answering seven yes/no answers, and provided demographic information in the surveys.

Maritime SAR Planner Course Task Surveys (Graduates/Supervisors)

Graduates and supervisors evaluated twenty-six Maritime SAR Planner Course curriculum tasks for frequency of performance, task importance, and graduate proficiency/adequacy. Graduates judged training adequacy based on their experience as new controllers while their supervisors judged adequacy based on their observation of

graduate proficiency. Respondents rated curriculum tasks by using a five item response scale tied to three criteria (frequency, importance, and adequacy/proficiency). Tables 3 and 4 display survey criteria and scale ranges for graduates and their supervisors, Table 5 provides responses, and Table 6 displays computed means for the surveyed populations. Scale ranges and criteria in Tables 5 and 6 refer to the scales/ranges in Tables 3 and 4. Numeric values for scale definition letters in Tables 3 and 4 are: 1 = (A), (F), (K), 2 = (B), (G), (L), 3 = (C), (H), (M), 4 = (D), (I), (N), and 5 = (E), (J), (O).

Table 3 (Maritime SAR Course Graduate Survey Criteria and Scale Ranges)

Frequency **How often do you perform the task?**	***Importance*** **How important is the task to the mission?**	***Adequacy (graduates)*** **How adequate was training for the job?**
(A) Do not perform/ supervise the task	(F) Do not perform/ supervise the task	(K) Does not perform the task
(B) 10% of cases	(G) Minimal value to the job	(L) Extremely limited
(C) 25% of cases	(H) Moderate value to the job	(M) Partially proficient
(D) 50% of cases	(I) Required for the job, but not essential	(N) Competent
(E) 75+% of cases	(J) Critical to unit's mission	(O) Highly proficient

Table 4 (Maritime SAR Course Graduate Supervisors Survey Criteria and Scale Ranges)

Frequency **How often do you perform the task?**	***Importance*** **How important is the task to the mission?**	***Adequacy (supervisors)*** **How proficient is the graduate?**
(A) Do not perform/ supervise the task	(F) Do not perform/ supervise the task	(K) Does not perform the task
(B) 10% of cases	(G) Minimal value to the job	(L) Extremely limited
(C) 25% of cases	(H) Moderate value to the job	(M) Partially proficient
(D) 50% of cases	(I) Required for the job, but not essential	(N) Competent
(E) 75+% of cases	(J) Critical to unit's mission	(O) Highly proficient

Table 5 (Course Task Responses By Scale) Letters refer to scale range noted in Tables 3 and 4.

	Graduates															Supervisors													
Item	Frequency					Importance					Adequacy					Frequency					Importance					Proficiency				
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	3	7	4	2	3	1	0	4	4	10	0	0	0	15	4	0	4	3	2	2	0	0	0	4	7	0	0	0	5	6
2	8	7	4	0	0	3	5	7	0	4	3	0	4	9	3	2	7	2	0	0	1	3	2	1	4	1	0	2	6	2
3	6	12	1	0	0	2	6	6	0	5	2	0	5	9	3	1	8	1	1	0	1	1	1	2	6	1	0	1	5	4
4	11	5	3	0	0	9	2	4	4	0	8	2	2	6	1	5	6	0	0	0	5	1	1	3	1	5	0	0	5	1
5	9	7	3	0	0	7	2	3	3	3	4	0	3	6	6	3	6	1	1	0	3	1	0	6	1	3	0	1	5	2
6	7	6	5	1	0	3	5	2	2	7	2	0	5	7	4	2	5	3	1	0	2	1	0	5	3	2	0	1	6	2
7	8	8	1	1	0	4	6	3	3	3	3	0	4	7	5	2	4	4	1	0	2	1	0	4	4	2	0	1	6	2
8	2	7	3	5	2	0	0	3	6	10	0	0	1	12	6	1	5	3	1	1	1	0	0	4	6	1	0	0	4	6
9	2	6	3	1	6	1	0	4	1	13	1	0	2	7	8	1	3	3	1	3	1	0	0	1	9	1	0	0	2	8
10	13	3	2	1	0	12	1	2	1	3	14	0	4	1	0	7	2	2	0	0	5	1	0	2	2	6	0	0	3	1
11	3	5	2	1	7	0	0	3	1	15	0	0	1	8	10	0	5	2	1	2	0	0	0	4	7	0	0	0	5	6
12	3	5	5	2	3	1	0	5	3	10	1	0	2	9	6	1	4	4	1	1	1	0	0	4	6	1	0	1	4	5
13	8	5	2	1	2	3	1	3	6	5	1	0	3	10	5	1	5	2	0	2	1	0	2	2	5	1	0	2	3	5
14	4	8	3	2	2	1	0	6	5	7	1	0	3	9	6	1	5	3	0	2	1	0	0	4	6	1	0	0	3	7
15	1	3	0	2	13	1	0	2	0	16	1	0	1	6	10	1	0	0	1	9	1	0	0	1	9	1	0	0	3	7
16	2	4	2	0	11	0	0	1	4	14	0	0	0	7	11	1	1	1	2	6	0	0	0	2	9	0	0	0	4	7
17	4	5	2	4	2	1	1	0	7	10	1	0	3	7	8	1	4	1	3	1	1	0	1	2	7	1	0	1	4	5
18	1	9	6	0	2	0	0	1	4	14	0	0	2	6	11	0	7	3	1	0	0	0	0	2	9	0	0	1	2	8
19	8	8	2	1	0	3	2	4	3	5	2	0	2	12	1	3	6	2	0	0	2	1	1	1	6	2	0	2	5	2
20	5	9	3	2	0	4	0	6	4	4	2	0	4	9	3	0	8	1	2	0	0	0	5	2	4	0	0	2	7	2
21	2	8	3	5	1	0	2	5	7	4	0	1	1	12	5	2	5	0	2	2	1	1	1	4	4	1	1	1	5	3
22	0	3	2	2	12	0	0	0	6	13	0	0	1	8	10	0	2	2	0	7	0	0	0	1	10	0	0	0	3	7
23	1	4	3	7	4	0	0	1	7	11	0	0	2	8	9	0	4	2	3	2	0	0	1	2	7	0	0	0	4	7
24	3	5	4	3	4	1	1	1	4	12	1	0	2	9	7	1	6	1	3	0	1	0	1	2	7	1	0	0	5	5
25	11	5	2	1	0	6	2	2	5	4	5	2	2	6	3	5	4	1	1	0	5	0	0	2	4	5	0	1	2	3
26	3	6	7	1	1	1	0	4	4	10	1	0	0	10	6	1	4	5	0	1	1	0	0	2	7	1	0	0	5	5

Table 6 (Course Task Frequency (F), Importance (I), Adequacy(A) Means)

Course Tasks	Graduates			Supervisors			X		
	(F)	(I)	(A)	(F)	(I)	(A)	(F)	(I)	(A)
1. Determine datum	2.74	4.16	4.21	3.18	4.64	4.55	2.90	4.33	4.33
2. Determine datum minimax	1.79	2.84	3.47	2.00	3.36	3.73	1.87	3.03	3.57
3. Determine successive datums	1.74	3.00	3.58	2.18	4.00	4.00	1.90	3.37	3.73
4. Calculate reversing tidal current	1.58	2.16	2.47	1.55	2.45	2.73	1.57	2.43	2.57
5. Compute sea current	1.68	2.61	3.53	2.00	3.09	3.27	1.70	2.79	3.43
6. Compute wind driven current	2.00	3.26	3.61	2.27	3.55	3.55	2.10	3.37	3.59
7. Calculate leeway	1.72	2.74	3.58	2.36	3.64	3.55	1.97	3.07	3.57
8. Determine search area radius	2.89	4.37	4.26	2.64	4.27	4.27	2.80	4.33	4.27
9. Describe search area	3.17	4.32	4.17	3.18	4.55	4.45	3.17	4.40	4.13
10. Employ CASP	1.53	2.05	1.58	1.55	2.50	2.30	1.53	2.21	1.83
11. Select search pattern	3.22	4.63	4.47	3.00	4.64	4.55	3.03	4.79	4.50
12. Compute sweep width	2.83	4.11	4.06	2.73	4.27	4.09	2.79	4.17	4.07
13. Allocate effort	2.11	3.50	3.95	2.70	4.00	4.00	2.32	3.68	3.97
14. Compute coverage factor and POD	2.47	3.89	4.00	2.73	4.27	4.36	2.70	3.77	4.13
15. Maintain documentation	4.21	4.58	4.33	4.55	4.55	4.36	4.33	4.57	4.34
16. Write SITREP	3.74	4.68	4.61	4.00	4.82	4.64	3.83	4.73	4.62
17. Write SAR action plan	2.71	4.26	4.11	2.90	4.27	4.09	2.68	4.27	4.10
18. Plan MEDEVAC	2.61	4.68	4.47	2.45	4.82	4.64	2.89	4.73	4.53
19. Plan drift compensated search pattern	1.79	3.29	3.59	1.91	3.73	3.45	1.83	3.34	3.54
20. Evaluate legal aspects	2.11	3.22	3.61	2.45	3.91	4.00	2.23	3.48	3.63
21. Provide public affairs/media briefing	2.74	3.72	4.11	2.73	3.82	3.73	2.73	3.76	3.90
22. Brief supervisor, CO/Dist Commander	4.21	4.68	4.47	4.09	4.91	4.70	4.17	4.53	4.40
23. Obtain resources from other federal/state/local agencies	3.47	4.53	4.37	3.27	4.60	4.64	3.30	4.55	4.47
24. Obtain interview respondents to develop case information	3.00	4.32	4.11	2.55	4.27	4.18	2.83	4.30	4.13
25. Plan or assist in inland searches	1.63	2.95	3.00	1.82	3.00	2.82	1.70	2.97	2.93
26. Prosecute flare sightings	2.50	4.16	4.18	2.64	4.40	4.18	2.55	4.24	4.18

Population Mean (graduate and supervisors) = ΣX values ÷ N responses

X = Combined Mean for entire population = ΣX responses from both populations ÷ N.

Responses are in Table 5. Scale values are A, F, K = 1 B, G, L = 2 C, H, M = 3 D, I, N = 4 E, J, O = 5. They are listed in Tables 3 and 4

Question 1. Determine datum. Graduate and supervisor responses were similar with combined means of 2.90 (F), 4.33 (I), and 4.33 (A) indicating that many of the controllers do not frequently compute datum but that both they and their supervisors consider it to be an important task. Both groups evaluated the graduates as competent to highly proficient at computing datum.

Question 2. Determine datum minimax. Graduate and supervisor responses were similar with combined means of 1.87 (F), 3.03 (I), and 3.57 (A). Both graduates and supervisors viewed this task as an infrequently performed skill of moderate value. However, supervisors viewed this task as slightly more critical than their graduate subordinates. Both groups indicated that graduates either did not perform the task or were competent.

Question 3. Determining successive datums. Both populations evaluated this task as infrequently performed (1.90) and graduates as basically competent (3.37). The combined mean for importance (3.73) indicates that the task is important but not critical although the supervisors tended to view this task as more critical than the subordinates.

Question 4. Calculate reversing tidal current. Combined means were 1.57 (F), 2.43 (I), and 2.57 (A). Responses from graduates and supervisors were similar and indicate the task is infrequently performed and of limited value. Both graduates and their supervisors also considered graduate proficiency to perform this task as limited. Responses tended to fall at either end of the adequacy range scale, indicating that most graduates either did not perform the task or were very proficient.

Question 5. Compute sea current. Combined means of 1.70 (F), 2.79 (I), and 3.43 (A) indicate that computing sea current is infrequent, of moderate value, and most graduates are partially proficient to competent to perform the task. Supervisors tended to view the task as more important than graduates and both populations indicated that either their proficiency to perform the task was very good or the task was not performed.

Question 6. Compute wind driven current. Combined means of 2.10 (F), 3.37 (I), and 3.59 (A) and similar response distribution for both populations indicates that this task is performed somewhat infrequently but more often than computing sea current or reversing tidal current. Responses also indicate the task is moderately important and that graduates are proficient.

Question 7. Calculate leeway. Combined means were 1.97 (F), 3.07 (I), and 3.57 (A). Graduates indicated they calculated leeway more infrequently than their supervisors believed. Graduate responses regarding the importance of this task were distributed across the scale while supervisor responses were distributed at both ends of the scale range. Both populations indicated graduates were proficient to perform the task.

Question 8. Determine search area radius. Responses were similarly distributed for both populations. Combined means were 2.80 (F), 4.33 (I), and 4.27(A). Respondents indicated the task was typically performed in ten to twenty-five percent of the cases worked by the graduates. Respondent evaluations were concentrated at the upper end of the importance/proficiency scales.

Question 9. Describe search area. Responses and distributions were similar for both populations. Combined means were 3.17 (F), 4.40 (I), and 4.13 (A). Respondents performed the task regularly, viewed it as important, and viewed their proficiency to perform the task as competent to highly proficient.

Question 10. Employ CASP. Combined means were 1.53 (F), 2.21 (I), and 1.83 (A). A significant percentage of respondents (63.63 percent of graduate and 68.42 percent of supervisor respondents) indicated the task was either infrequently performed or not performed/supervised. However, the responses also indicated a small number of graduates had at least some proficiency in performing the skill.

Question 11. Select search pattern. Combined means were 3.03 (F), 4.79 (I), and 4.50 (A). Responses regarding frequency were similar but graduates indicated they performed the task more frequently than their supervisors indicated. Both populations

evaluated the task as very important and graduates either competent or highly proficient to perform the task.

Question 12. Compute sweep width. Combined means were 2.79 (F), 4.17 (I), and 4.07 (A) with responses similarly distributed for both populations. Responses were distributed across the frequency range with a tendency towards performing the task in 10 to 25 percent of the cases. Both populations viewed the task as important and graduate proficiency as high.

Question 13. Allocate effort. Combined means were 2.32 (F), 3.68 (I), and 3.97 (A). Graduates indicated they performed the task less frequently than their supervisors had assessed. However, both population means tended toward 10 to 25 percent of the case load. Both populations viewed effort allocation as important and graduate training to be adequate for the task.

Question 14. Compute coverage factor and POD. Combined means and response distribution were similar for both populations. Combined means were 2.70 (F), 3.77 (I), and 4.13 (A) indicating that although the task was important and graduates were proficient in performing it, the task was performed in less than 25 percent of the normal case load.

Question 15. Maintain documentation. Responses were similarly distributed for both populations with combined means of 4.33 (F), 4.57 (I), and 4.34 (A). This task is frequently performed, important, and graduates were proficient.

Question 16. Write SITREP. Responses were similar for both populations. Combined means of 3.83 (F), 4.73 (I), and 4.62 (A) indicate that the task is frequently performed, important, and graduate proficiency is high.

Question 17. Write SAR action plan. Responses from both populations were similar for frequency, importance, and adequacy although graduate evaluations of task frequency were more evenly distributed across the scale range. Combined means of 2.68

(F), 4.27 (I), and 4.10 (A) indicate that the task is performed in approximately 25 percent of cases, important, and most graduates are competent to highly proficient to perform it.

Question 18. Plan MEDEVAC. Similar responses from both groups indicate the task is performed in only 10 to 25 percent of cases, the task is critically important, and graduates are highly proficient. Combined means were 2.89 (F), 4.73 (I), and 4.53 (A).

Question 19. Plan drift compensated search pattern. More graduates (42.10 percent) than supervisors (27.27 percent) indicated they did not perform the task. Supervisor responses were also concentrated at the lower end of the scale for a combined mean of 1.83 (F). Most graduate responses (78.95 percent) were distributed across the upper three levels of the importance scale with a graduate mean of 3.29 while 54.54 percent of their supervisors evaluated the task as critical with a supervisor mean of 3.73. Proficiency responses were similar for both groups with a combined mean of 3.54 (A).

Question 20. Evaluate legal aspects. Although 26.31 percent of graduates indicated they did not perform the task, the remaining graduate responses were distributed similarly to the supervisors for a combined mean of 2.23 (F) indicating this task is performed in only 10 percent of cases. Responses regarding task importance were similar for both populations although 21.05 percent of graduates indicated they did not perform the task. Responses regarding adequacy were similar for both populations with a combined mean of 3.63 (A) indicating that most graduates could perform the task.

Question 21. Provide public affairs/media briefing. Responses from both populations were similar for frequency, importance, and adequacy. Combined means of 2.73 (F), 3.76 (I), and 3.90 (A) indicate that the task is regularly performed, important, and most graduates are competent to perform it.

Question 22. Brief supervisor, CO/District Commander. Responses from both populations were similarly distributed with combined means of 4.17 (F), 4.53 (I), and 4.40 (A) indicating the task is frequently performed, critical, and graduates are competent to highly proficient.

Question 23. Obtain resources from other federal/state/local agencies. Similar response distribution for both populations and combined means of 3.30 (F), 4.55 (I), and 4.47 (A) indicate that the task is regularly performed, important, and most graduates are competent to highly proficient.

Question 24. Obtain interview respondents to develop case information. Graduate responses were distributed evenly across the frequency scale range with a mean of 3.00. Supervisors indicated the task was more infrequently performed with a mean of 2.55. Both populations had similar response distribution and combined means of 4.30 (I) and 4.13 (A) indicating the task is important and graduates are competent to perform it.

Question 25. Plan or assist in inland searches. Similar responses and a combined mean of 1.70 (F) indicate the task is infrequently performed by most respondents. Almost half of the supervisors (45.45 percent) indicated they did not perform/supervise the task while the remaining supervisors indicated the task was of moderate to critical importance. Graduate responses were spread more evenly across the importance scale range, although both supervisor and graduate importance means were similar for a combined mean of 2.97 (I). Adequacy means regarding graduate proficiency were similar although supervisor responses were concentrated at both ends of the scale while graduate responses were more evenly distributed. A combined adequacy mean of 2.93 (A) indicates graduates are partially proficient at the task.

Question 26. Prosecute flare sightings. Graduate and supervisor responses were similar with combined means of 2.55 (F), 4.24 (I), and 4.18 (A) indicating that many controllers regularly prosecute flare sightings, controllers and supervisors view it as an important task, and that the graduates are competent to highly proficient at the task.

Maritime SAR Planner Course Critiques (Graduates/Supervisors)

Thirty respondents answered seven yes/no questions regarding the course's ability to meet their training needs. The supervisor's survey substitutes "the graduate" for "you" or "your" used in the graduate's survey. Questions repeated below are from the graduate's survey. Table 7 displays critique questions and associated data.

Question 1. Are you satisfied with your skills since completion of training at RTC Yorktown? Eighteen graduates (94.73 percent) answered yes and one (5.26 percent) answered no. Ten supervisors (90.90 percent) answered yes and one (9.10 percent) answered no. The similar responses and combined mean of 1.07 indicates that graduates skills are predominantly satisfactory after they return from the course.

Question 2. Are there revisions that you would recommend in the instruction of this course that would more adequately prepare you to perform the job tasks? Eight graduates (42.10 percent) answered yes and eleven (57.89 percent) answered no. Six supervisors (54.54 percent) answered yes and five (45.45 percent) answered no. The similar range of responses and combined mean of 1.53 indicate that many respondents would change the resident course. An almost equal number would leave the course as is.

Question 3. Are there revisions that you would recommend in the instruction of this course that would make your job less difficult? Eight graduates (42.10 percent) answered yes and eleven (57.89 percent) answered no. Two supervisors (18.18 percent) answered yes and nine (81.8 percent) answered no. The combined mean of 1.67 indicates satisfaction with the current course, but graduates indicate they would be more prone to seek changes in the course to make their jobs easier.

Question 4. Are there any job tasks that you perform that are not taught in the course that you feel require training? Similar responses and a combined mean of 1.67 indicates that many respondents perform tasks that require training but most are satisfied with the current task list.

Table 7 (Critique of Maritime SAR Planner Course Training)

Items	Graduates					Supervisors					
	Yes		No			Yes		No			
	N	%	N	%	x	N	%	N	%	y	X
1. Are you satisfied with your skills since completion of training at RTC Yorktown?	18	94.73%	1	5.26%	1.05	10	90.91%	1	9.09%	1.09	1.07
2. Are there revisions that you would recommend in the instruction of this course that would more adequately prepare you to perform the job tasks?	8	42.10%	11	57.89%	1.58	6	54.54%	5	45.45%	1.45	1.53
3. Are there revisions that you would recommend in the instruction of this course that would make your job less difficult?	8	42.10%	11	57.89%	1.58	2	18.18%	9	81.81%	1.82	1.67
4. Are there any job tasks that you perform that are not taught in the course that you feel require training?	6	31.57%	13	68.42%	1.68	4	36.36%	7	63.63%	1.64	1.67
5. Are there any job tasks that you perform that are recommended for supervised on-the-job training rather that resident training?	5	26.31%	14	73.68%	1.74	0	0.00%	11	100%	2.00	1.83
6. Are there any job-related problems that you encountered at your unit that resident training has impacted? One supervisor did not answer.	5	26.31%	14	73.68%	1.74	1	9.09%	9	81.81%	1.90	1.79
7. Are there any job-related problems that you encountered at your unit that resident training has not impacted? Two supervisors did not answer.	1	5.26%	18	94.73%	1.95	1	9.09%	8	72.72%	1.89	1.93

x = graduate mean, y = supervisor mean, N = number of respondents.

ΣN = Sum of N answers where Yes = 1 and No answer = 2

$x = \Sigma X$ graduate responses ÷ N graduate responses. $y = \Sigma Y$ supervisor responses ÷ N supervisor responses

X = Combined Mean = ΣX graduate + and ΣY supervisor responses ÷ N graduate and supervisor responses.

Question 5. Are there any job tasks that you perform that are recommended for supervised on-the-job training rather that resident training? Five graduates (26.31 percent) answered yes and fourteen (73.68 percent) answered no. Eleven supervisors (100 percent) answered no with a combined mean of 1.83. No supervisors and most graduates would not replace resident training with OJT.

Question 6. Are there any job-related problems that you encountered at your unit that resident training has impacted? One supervisor respondent did not answer this question. Five graduates (26.31 percent) answered yes and fourteen (73.68 percent) answered no. One supervisor (9.09 percent) answered yes and nine (81.81 percent) answered no with a combined mean of 1.79. A higher percentage of graduates than supervisors felt that training had impacted their job-related problems.

Question 7. Are there any job-related problems that you encountered at your unit that resident training has not impacted? Two supervisors did not answer this question. Similar responses from both groups and a combined mean of 1.93 indicates that resident training impacted their job-related problems.

Maritime SAR Planner Graduate and Supervisor Demographic Information

Maritime SAR Planner course graduates and their supervisors completed fourteen demographic questions related to the graduate's type of unit, tenure at the unit, case load and other pertinent information. Tables after each demographic question display data from the demographic portion of the surveys. Scale values are yes = 1, no = 2, or (a) = 1, (b) = 2, (c) = 3, (d) = 4, and (e) = 5. Number of respondents are included in parentheses in each table. Means were computed by dividing ΣX responses for each question by the number of responses where N equals the number of respondents. Combined means were computed by summing the responses from both populations and dividing by the total number of respondents. Means were not computed for all demographic data.

Question 1. How long since the graduate attended resident training? Fifteen graduates (78.94 percent) indicated they completed the course six to twelve months prior to completing the survey. Most of their supervisors (81.81 percent) also identified the same time period for a combined mean of 3.17.

Table 8 (Period After Graduation From Course)

Population	< 3 months (a)	3-6 months (b)	6-9 months (c)	9-12 months (d)	> 12 months (e)	Mean
Graduates	0.00% (0)	15.78% (3)	52.63% (10)	26.31% (5)	5.26% (1)	3.21
Supervisors	0.00% (0)	18.18% (2)	54.54% (6)	27.27% (3)	0.00% (0)	3.09

Combined mean = 3.17

Question 2. What type of unit is the graduate currently assigned? Similar responses indicate that most respondents were assigned to a Group OPCEN. All respondents (except for one graduate and one supervisor) were assigned to either an Area, District, or Group Operations Center.

Table 9 (Graduate's Assigned Unit Type)

Population	Dist/Area OPCEN	Group OPCEN	Small Boat Station	Air Station	Afloat
Graduates	26.32% (5)	68.42% (13)	0.00% (0)	0.00% (0)	0.00% (0)
Supervisors	36.36% (4)	54.54% (6)	0.00% (0)	0.00% (0)	0.00% (0)

One graduate and one supervisor were assigned to a unit not identified in the survey.

Question 3. How long has the graduate been at the unit? Similarly distributed answers and a combined mean of 2.13 indicate that most graduates had been at their units for six months to one year.

Table 10 (Graduate's Time at Assigned Unit)

Population	0-6 months	6 months - year	1-2 years	2-3 years	> 3 years	Mean
Graduates	15.78% (3)	68.42% (13)	15.78% (3)	0.00% (0)	0.00% (0)	2.00
Supervisors	0.00% (0)	63.63% (7)	36.36% (4)	0.00% (0)	0.00% (0)	2.36

Combined mean = 2.13

Question 4. Does the unit use the SAR School's Search Planning Worksheets? The groups were almost equally split between using/not using the worksheets with a

combined mean of 1.43. Almost half of the respondents indicated their unit was not using SAR school's worksheets.

Table 11 (Use of SAR School Search Planning Worksheets)

Population	Yes	No	Mean
Graduates	57.89% (11)	42.10% (8)	1.42
Supervisors	54.54% (6)	45.45% (5)	1.45

Combined mean = 1.43

Question 5. What SAR job does the graduate do? Most graduates are performing SAR related duties as a RCC Controller/Assistant Controller or as a Group/Station Officer Of the Day (OOD). There were no Deck Watch Officer (DWO), coxswains, or pilots in the surveyed population. A smaller but significant percentage of graduates are in Operations Department/Staff billets.

Table 12 (Graduate's SAR Job)

Population	RCC Controller /Assistant	Group/ Station OOD	DWO/ Coxswain	Pilot	OPS/ Staff Officer
Graduates	31.57% (6)	42.10% (8)	0.00% (0)	0.00% (0)	26.31% (5)
Supervisor	27.27% (3)	45.45% (5)	0.00% (0)	0.00% (0)	18.18% (2)

Question 6. Is this SAR duty a primary or collateral job? Responses were similar for both populations. The responses and combined mean of 1.17 indicates that most graduates are performing SAR duties as a primary work task/billet responsibility.

Table 13 (Graduate's SAR Duty)

Population	Primary (a)	Collateral (b)	Mean
Graduates	84.21% (16)	15.78% (3)	1.16
Supervisors	81.81% (9)	18.18% (2)	1.18

Combined mean = 1.17

Question 7. How often does the graduate perform duties as a SAR Planner? Most graduate and supervisor responses and a combined mean of 2.59 indicate that graduates perform SAR Planner duties at least weekly. A small but significant percentage performed planner duties on a monthly basis.

Table 14 (SAR Planner Performance of Duty Frequency)

Population	Daily (a)	Twice a week (b)	Weekly (c)	Twice a Month (d)	Monthly (e)	Mean
Graduates	10.52% (2)	57.89% (11)	10.52% (2)	0.00% (0)	15.78% (3)	2.50
Supervisors	9.09% (1)	45.45% (5)	0.00% (0)	9.09% (1)	18.18% (2)	2.78

Combined mean = 2.59

Question 8. How long is the SAR planning watch shift? All supervisors and eighteen graduates (94.73 percent) indicated their watch shift is either 24 or 12 hours in duration. Similar response distribution and a combined mean of 2.17, indicates that most graduates were in a 24 hour watch section.

Table 15 (SAR Planner Watch Shift Duration)

Population	48 hours	24 hours	12 hours	8 hours	Other	Mean
Graduates	5.26% (1)	73.68% (14)	21.05% (4)	0.00% (0)	0.00% (0)	2.16
Supervisors	0.00% (0)	80.00% (8)	20.00% (2)	0.00% (0)	0.00% (0)	2.20

Combined mean = 2.17

Question 9. Do you currently supervise/oversee SAR case planning (crunch numbers)? Although most graduates indicated they directly supervised SAR planning computational tasks, eight graduates (44.44 percent) indicated they did not. In contrast, nine supervisors (81.81 percent) indicated they directly supervised/performed SAR planning computation tasks.

Table 16 (Supervise Use of SAR School Search Planning Worksheets)

Population	Yes	No	Mean
Graduates	55.55% (10)	44.44% (8)	1.44
Supervisors	81.81% (9)	18.18 (2)	1.18

Combined mean = 1.34

Question 10. What is the graduate's units annual level of case load per year? Graduate responses were distributed across the scale range, indicating a wide variance in unit case loads across the graduate population. Supervisors responses were similar in distribution to the graduates. The combined mean of 2.79 reflects the distribution of responses across the range scale.

Table 17 (Graduate's Unit Annual Case Load)

Population	< 250 (a)	250 - 50 (b)	501 - 750 (c)	751 - 1K (d)	> 1K (e)	Mean
Graduates	27.77% (5)	22.22% (4)	22.22% (4)	5.55% (1)	22.22% (4)	2.72
Supervisors	18.18% (2)	36.36% (4)	9.09% (1)	9.09% (1)	27.27% (3)	2.91

Combined mean = 2.79

Question 11. How many cases a year does the graduate's unit use CASP? Similar responses from both populations concentrated at the lower end of the scale range and a combined mean of 1.59 indicate that most of the graduates do not use CASP frequently, if at all. However, similar responses from both populations also indicated that a small but significant percentage of the graduates use CASP more frequently.

Table 18 (Graduate's Unit Annual CASP Case Load)

Population	0 - 10 (a)	11 - 20 (b)	21 - 30 (c)	31 - 50 (d)	51+ (e)	Mean
Graduates	83.33% (15)	0.00% (0)	5.55% (1)	5.55% (1)	5.55% (1)	1.50
Supervisors	72.72% (8)	0.00% (0)	9.09% (1)	18.18% (2)	0.00% (0)	1.73

Combined mean = 1.59

Question 12. What is the graduate's pay grade? Responses from both populations were similar and indicated that most of the graduates were mid-grade petty officers with a smaller but significant population (33.32 percent based on graduate responses) of junior officers and Chief Warrant Officers.

Table 19 (Graduate's Pay Grade)

Population	E4 - E6	E7 - E9	01 - 02	03 or CWOs	04 or above
Graduates	55.55% (10)	11.11% (2)	16.66% (3)	16.66% (3)	0.00% (0)
Supervisors	63.63% (7)	0.00% (0)	18.18% (2)	18.18% (2)	0.00% (0)

Question 13. How many years have you been at that pay grade? Responses from both populations were concentrated in the mid to upper ends of the range scale indicating that most of the graduates had been at their current pay grades for at least one year. However, it is reasonable to assume that graduates would have a better understanding of

their own pay grade status. Their responses indicate that eleven graduates (55.55 percent) had six months to two years in current pay grade while the remainder had more.

Table 20 (Graduate's Time In Pay Grade)

Population	0 - 6 months (a)	6 months - year (b)	1-2 years (c)	2-3 years (d)	> 3 years (e)	Mean
Graduates	0.00% (0)	11.11% (2)	44.44% (8)	5.55% (1)	38.88% (7)	3.72
Supervisors	0.00% (0)	0.00% (0)	18.18% (2)	27.27% (3)	54.54% (6)	4.36

Combined mean = 3.97

Question 14. Have you been in other billets with SAR duties? Most graduate respondents were previously assigned in a SAR related billet prior to their current assignment. However, six graduates (31.57 percent) indicated this was their first SAR billet. Nine supervisors (81.81 percent) indicated they had been in a SAR related billet prior to their current assignment. Two supervisors (18.18 percent) indicated this was their first SAR billet.

Table 21 (Experience in SAR Billets)

Population	Yes	No	Mean
Graduates	68.42% (13)	31.57% (6)	1.32
Supervisors	81.81% (9)	18.18 (2)	1.18

Combined mean = 1.27

National SAR School Instructors and RCC Controllers

The researcher used a survey (Appendix D) to gather data from a small but key pool of SAR instructors and RCC controllers regarding potential refresher course tasks. Instructors surveyed for this study conduct the Maritime SAR Planner course at the National SAR School. Controllers were seasoned SAR experts attending a SAR conference that included controller/watch training as a focus issue. Appendix E includes pertinent conference excerpts. Respondents were asked to determine if the twenty-six course tasks that make up the approved resident Maritime SAR Planner curriculum should be included in a refresher course and if a refresher course would be beneficial.

Controllers and instructors examined the same tasks in the same order as those examined by course graduates and their supervisors. They also responded to two general and two demographic questions. One open-ended question asked respondents if they had any other course tasks that should be included. There were no responses to this question.

Controller and Instructor Course Task Survey Results

Respondents used a Likert scale where A = Strongly Disagree (1), B = Disagree (2), C = Unsure (3), D = Agree (4), and E = Strongly Agree (5) to evaluate a given task inserted into this statement: TASK needs to be included in a computer-based SAR Planner Refresher Course. Table 22 displays the results from the controller and instructor course task survey.

Question 1. Determine datum. Controller and instructor responses were similar with a combined mean of 4.38 indicating that both populations believe the task should be included in a refresher course.

Question 2. Determine datum minimax. Similar means for both populations and a combined mean of 3.69 indicate that most respondents would include this task.

Question 3. Determine successive datums. Similar responses from both populations and a combined mean of 4.46 indicate agreement that the task should be included in a refresher course.

Question 4. Calculate reversing tidal current. Responses from both populations were distributed across the scale with a combined mean of 3.23 indicating a lack of consensus regarding the need to include this task in a refresher course.

Table 22 (Controller (C) and Instructor (I) Course Task Responses and Means)

Course Tasks	Controllers SD D U A SA	Instructors SD D U A SA	Means (C)	(I)	X
1. Determine datum	0 0 0 4 4	0 0 1 2 2	4.50	4.20	4.38
2. Determine datum minimax	1 1 0 4 2	0 1 1 1 2	3.63	3.80	3.69
3. Determine successive datums	0 0 0 5 3	0 0 0 2 3	4.38	4.60	4.46
4. Calculate reversing tidal current	1 2 1 2 2	0 2 1 1 1	3.25	3.20	3.23
5. Compute sea current	1 2 0 2 3	0 1 1 1 2	3.50	3.80	3.62
6. Compute wind driven current	1 0 0 5 2	0 1 0 3 1	3.88	3.80	3.85
7. Calculate leeway	1 1 0 2 4	0 0 0 3 2	3.88	4.40	4.08
8. Determine search area radius	0 1 2 4 1	0 0 0 4 1	3.63	4.20	3.85
9. Describe search area	0 1 2 3 2	0 0 1 2 2	3.75	4.20	3.92
10. Employ CASP	0 1 0 0 7	1 0 0 2 2	4.63	3.80	4.31
11. Select search pattern	0 0 2 2 4	0 0 0 4 1	4.25	4.20	4.23
12. Compute sweep width	0 0 0 4 4	0 0 0 4 1	4.50	4.20	4.38
13. Allocate effort	0 2 2 3 1	0 1 0 3 1	3.38	3.80	3.46
14. Compute coverage factor and POD	0 0 0 4 4	0 1 0 3 1	4.50	3.80	4.23
15. Maintain documentation	1 2 0 3 2	0 0 3 2 0	3.37	3.40	3.38
16. Write SITREP	0 4 0 1 3	0 2 1 2 0	3.38	3.00	3.23
17. Write SAR action plan	0 3 0 1 4	0 1 1 3 0	3.75	3.40	3.62
18. Plan MEDEVAC	0 2 0 5 1	0 3 2 0 0	3.63	2.40	3.15
19. Plan drift compensated search pattern	0 0 0 6 2	2 2 0 1 0	4.25	2.00	3.00
20. Evaluate legal aspects	0 3 2 2 1	3 2 0 0 0	3.13	1.40	2.62
21. Provide public affairs/media briefing	0 5 0 3 0	2 3 0 0 0	2.75	1.60	2.31
22. Brief supervisor, CO/District Commander	1 3 0 1 3	0 2 2 1 0	3.25	2.80	3.08
23. Obtain resources from other fed/state/local agencies	1 1 1 4 1	1 3 0 1 0	3.38	2.20	2.92
24. Obtain interview respondents to develop case information	0 4 0 2 2	0 2 1 1 1	3.25	3.20	3.23
25. Plan or assist in inland searches	0 4 0 2 2	3 1 0 1 0	3.13	1.80	2.69
26. Prosecute flare sightings	0 0 1 5 2	0 0 2 2 1	4.13	3.80	4.00

C = Controller mean = ΣX controller responses ÷ N I = Instructor mean = ΣY instructor responses ÷ N X = Combined Mean = ΣX controller + ΣY instructor responses ÷ N.

Question 5. Compute sea current. Responses from both populations trending toward agreement and a combined mean of 3.62 indicate that the task should be included in the refresher course.

Question 6. Compute wind driven current. Similar responses and a combined mean of 3.85 suggest agreement that this task should be included in the refresher course.

Question 7. Calculate leeway. Two controllers (25 percent) did not agree that this task should be included in the refresher course while the remaining controllers and all of the instructors did. The combined mean of 4.08 indicates solid agreement for including this task in the refresher course.

Question 8. Determine search area radius. Two controllers disagreed that the task should be in a refresher course (25 percent) and one was unsure (12.5 percent). The remaining controllers and all of the instructors agreed that the task should be in a refresher course. A combined mean of 3.85 indicates agreement with including the task in a refresher course.

Question 9. Describe search area. Similar responses and a combined mean of 3.92 indicates agreement that the task should be in a refresher course.

Question 10. Employ CASP. Similar responses and a combined mean of 4.31 indicates agreement with including this task in a refresher course.

Question 11. Select search pattern. Two controllers (25 percent) were uncertain if this task should be included in a refresher course. The other respondents either agreed or strongly agreed that the task should be included. The combined mean of 4.23 indicates agreement that the task should be included.

Question 12. Compute sweep width. Responses from both populations were clustered in the upper end of the scale with a combined mean of 4.38. Their responses indicate agreement that the task should be included in a refresher course.

Question 13. Allocate effort. Four controllers (50 percent) and four instructors (80 percent) agreed that the task should be included. The controller mean of 3.38 and combined mean of 3.46 indicate uncertainty regarding including this task in the refresher course.

Question 14. Computer coverage factor and POD. Similar responses and a combined mean of 4.23 indicate that both populations agree that this task should be included in a refresher course.

Question 15. Maintain documentation. Three controllers (37.5 percent) disagreed that this task should be in a refresher course and three instructors (60 percent) were uncertain. The other controllers and instructors agreed the task should be in a refresher course. Similar controller and instructor means and a combined mean of 3.38 indicate uncertainty regarding including this task.

Question 16. Write SITREP. Responses were similar for both populations with a combined mean of 3.23 indicating a significant degree of uncertainty regarding inclusion of this task in a refresher course.

Question 17. Write SAR action plan. Three controllers (37.5 percent) disagreed, one (12.5 percent) agreed, and four (50 percent) strongly agreed that the task should be included. The controller mean of 3.75 indicates overall agreement that the task should be included. The instructors were less convinced. Their mean was 3.40. The combined mean of 3.62 indicates a tendency toward agreement regarding including the task in the refresher course.

Question 18. Plan MEDEVAC. Five controllers (62.5 percent) agreed and one (12.5 percent) strongly agreed that the task should be included. The controller mean of 3.63 indicates agreement with including this task. Three instructors (60 percent) and two (40 percent) were uncertain regarding including the task in the refresher course. The controller mean of 3.63 indicates agreement that the task should be included while the instructor mean of 2.40 indicates disagreement.

Question 19. Plan drift compensated search pattern. Controller responses were concentrated at the upper end of the range scale with a mean of 4.25, indicating agreement that the task should be included in the refresher course. Instructor responses were concentrated at the lower end with a mean of 2.00 indicating disagreement regarding including the task.

Question 20. Evaluate legal aspects. Controller responses were distributed across the scale with a mean of 3.13 indicating a wide spectrum of opinion regarding including the task. Instructor responses were concentrated at the lower end of the range scale. The instructor mean of 1.40 and combined mean of 2.62 indicates a trend toward disagreement regarding inclusion of this task in the refresher course.

Question 21. Provide public affairs/media briefing. Five controllers (62.5 percent) disagreed and the remainder agreed for a controller mean of 2.75. Controller responses indicates overall uncertainty to disagreement regarding including this task in the refresher course. Instructor responses were concentrated at the lower end of the scale with a mean of 1.60. The combined mean of 2.31 indicates disagreement regarding including this task in a refresher course.

Question 22. Brief supervisor, CO/District Commander. Controller responses were clustered at either end of the scale range while instructors were concentrated at and around mid-range. The controller mean of 3.25, instructor mean of 2.80, and combined mean of 3.08 indicate uncertainty regarding including this task in a refresher course.

Question 23. Obtain resources from other federal/state/local agencies. Four controllers (50 percent) agreed that the task should be included in a refresher course. The remaining controllers were divided evenly across the scale for a mean of 3.38. Instructor responses were concentrated at the lower end of the scale for a mean of 2.20. The combined mean of 2.92 indicates uncertainty regarding including this task in a refresher course.

Question 24. Obtain interview respondents to develop case information. Similar responses from both populations divided between the disagree/agree parts of the scale range and a combined mean of 3.23 indicate polarization between agreement and disagreement regarding including this task in a refresher course.

Question 25. Plan or assist in inland searches. Controllers were divided between disagree and agree/strongly agree for a mean of 3.13, indicating uncertainty. Instructor responses were concentrated at the lower end of the scale for a mean of 1.80, indicating disagreement with including the task in a refresher course.

Question 26. Prosecute flare sightings. Similar responses from both populations and a combined mean of 4.00 indicates that the respondents agree the task should be included in a refresher course.

Controller and Instructor General and Demographic Survey Questions

Respondents evaluated two statements regarding the resident and refresher courses. Respondents used a Likert scale to evaluate a given statement where A = Strongly Disagree (1), B = Disagree (2), C = Unsure (3), D = Agree (4), and E = Strongly Agree (5)

Statement 1. Graduates leave the SAR Planners course with adequate skills to do their jobs as controllers. Similar responses from both populations and a combined mean of 3.69 indicate basic agreement with the statement. However, five respondents (38.46 percent) were either uncertain or disagreed with the statement.

Statement 2. Controllers would benefit from a CBT SAR Planner Refresher Course. Controller responses concentrated at the upper end of the scale range and a mean of 4.50 indicate strong agreement with the statement. Instructor responses were spread across the scale with an overall mean of 2.80 indicating uncertainty with the statement.

Table 23 displays data from the two general survey questions. Table 24 displays the information from three general demographic questions provided to the controller and instructor respondents.

Table 23 (Controller (C) and Instructor (I) General Question Responses and Means)

Item	Controllers SD D U A SA	Instructors SD D U A SA	Means (C) (I) X
1. Graduates leave the SAR Planners course with adequate skills to do their jobs as controllers.	0 1 2 3 2	0 1 1 2 1	3.75 3.60 3.69
2. Controllers would benefit from a CBT SAR Planner Refresher Course.	0 0 0 4 4	1 1 1 2 0	4.50 2.80 3.85

C = Controller mean = ΣX controller responses ÷ N
I = Instructor mean = ΣY instructor responses ÷ N
X = Combined Mean = ΣX controller + ΣY instructor responses ÷ N.

Demographic Question 1. What type of unit are you assigned to (select one)? All of the controllers are assigned to either an Area or District Command Centers. All of the instructors are assigned to the National SAR School.

Demographic Question 2. What SAR job do you do? All of the controllers confirmed that they are RCC Controllers or Assistant Controllers (the survey instrument did not distinguish between the two). All of the surveyed National SAR School staff are experienced Maritime Search Planning instructors.

Demographic Question 3. Do you directly perform or oversee SAR planning? All of the controllers either directly perform or oversee SAR planning. All of the National SAR School staff are active instructors tasked with presenting portions of the Maritime SAR Planning course.

Table 24 (Controller/Instructor Demographic Information)

Population	Type Unit (Question 1)	SAR Job (Question 2)	SAR Planning (Question 3)
Controllers	District/Area Command Center	RCC Controller or Assistant Controller	All directly oversee/perform SAR Planning
Instructors	National SAR School	Maritime SAR Planning Instructors and Staff	All are active SAR Planing instructors

Summary

This chapter presented data from surveys given to a pool of Coast Guard SAR experts that included Maritime SAR Planning Course graduates, their supervisors, National SAR School instructors, and RCC controllers. Course graduates and their supervisors evaluated how frequently graduates performed a detailed list of SAR planning tasks, the tasks' importance, and the adequacy of training to enable the graduate to perform the tasks.

Controllers and National SAR School Instructors were directly asked to evaluate the suitability of including the current resident course tasks in a computer-based refresher course. They were also asked if a refresher course would be beneficial.

Demographic information collected by the surveys provide background information regarding the current assignments, pay grades (seniority), unit SAR case load, SAR related experience, and reliance on SAR planning tools by the respondents. Chapter V provides a summary of this research study; conclusions, and recommendations based on survey results and information gleaned from available literature.

CHAPTER V
SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Chapter V summarizes the findings of this research study, reports the conclusions, and makes recommendations regarding the research problem and goals.

Summary

The problem of this research study was to identify the course tasks for a Coast Guard Rescue Coordination Center (RCC) controller exportable refresher course. Completing five research goals enabled the researcher to make conclusions and recommendations regarding the research problem. Information related to the problem statement and research goals was collected from Coast Guard SAR experts through a series of surveys, interviews, and personal interaction with members of the Coast Guard SAR community. Thus, the data accurately reflects the opinions of people knowledgeable about maritime SAR. The overwhelming majority of respondents are actively engaged in frequently performing maritime SAR related duties and most have previous experience in other SAR jobs prior to their current assignment.

Surveys were given to recent graduates of the Maritime SAR Planner Course and their supervisors. They were asked to evaluate the twenty-six resident course tasks for frequency of performance, importance to the graduate's unit, and the graduate's ability to perform the task/adequacy of training. They also completed a general course critique. Graduate and supervisor responses regarding the listed tasks were very similar, although there were some subtle trends. These include:

- Supervisors chose twenty-three of twenty-six tasks as more critical to the unit's mission than graduates.
- Supervisors rated graduate proficiency higher than the graduates themselves in eighteen of twenty-six tasks.

- Supervisors indicated tasks were performed more frequently than the graduates in seventeen of twenty-six tasks.

An additional survey was completed by the instructor staff of the National SAR School and experienced RCC controllers attending the 1995 Atlantic Area Coast Guard SAR Workshop. The instructors and controllers were directly queried about including the twenty-six resident course tasks from the resident curriculum in a computer-based RCC controller refresher training course. They were also asked if there were other tasks that should be included, if graduates received enough training from the resident course to perform their duties, and if controllers would benefit from the proposed refresher course. The controllers and instructors responded similarly to many of the items but controller means were greater (indicating a stronger tendency toward including the task in a refresher course) than the instructors in eighteen of twenty-six surveyed tasks. Controllers also saw more potential benefit from a refresher course than the instructors.

Conclusions

Several conclusions that are particularly pertinent to the research study can be drawn from the tabulated data and applied to the research goals. Research goals are listed with supporting conclusions. General conclusions that are pertinent to the research study's problem are also provided.

1. Identify resident course tasks that require additional training. No clear trend emerged from the data to identify resident course tasks that required immediate performance intervention. However the serious nature of saving life and property at sea mandates superb performance of the designated tasks since significant property loss,

injury, or death can result from improper performance of a SAR task. Except for Task 11 (Select search pattern) and Task 16 (Write SITREP) graduates and supervisors never collectively identified graduate proficiency/training adequacy at or above a mean of 4.50. Their supervisors identified only five of twenty-six tasks where graduate proficiency was very high.

Major contributing factors for graduate proficiency gaps that occur after completing the resident course are frequency of task performance, SAR system organization, and geographic area. These factors can also account for response differences and polarization (distribution of responses at either end of the response scale) for frequency, task importance, and proficiency. The factors can effect a graduates long-term ability to expertly perform the tasks. However, they are not indicative of a problem with the resident course. Further amplification of these factor's effect on course task performance and the need for additional training follows.

Many SAR tasks from the resident course curriculum are not regularly performed by controllers. In fact, only two tasks were clearly selected by graduates and their supervisors as occurring in 50 percent or more of the cases. They were Task 15 (Maintain Documentation) and Task 22 (Brief supervisor, CO/District Commander). These tasks occur more frequently as they would typically be performed by controllers regardless of the nature of the SAR case. This is in contrast to many of the remaining tasks where task performance is usually directly tied to the nature of the distress incident. For example, plan MEDEVAC is only needed for a case where a medical evacuation is

imminent, while calculate leeway is only needed if the current position of the search object is unknown or uncertain.

Demographics and the SAR system's organization also accounts for many of the differences in responses. Most of the surveyed graduates (68.42 percent) were assigned to Group Operations Centers (OPCENs). The other respondents were assigned to RCCs. These two organizations would typically handle SAR cases that, although they have many similarities, would often vary in scope, focus, and planning. RCC controllers would be expected to perform more complex case planning than their peers at smaller Group OPCENs. Different organizational responsibilities would impact the respondents view regarding a given task and could account for some of the 44.44 percent of graduates who indicated they did not perform detailed SAR planning tasks.

Lastly, opinions regarding inclusion of tasks in the resident course are driven by the respondent's specific geographic operations area. For example, reversing tidal currents, the need to respond to inland searches, and other tasks are often a function of the controller's local geographic operations area (i.e., a controller in Alaska would probably be more concerned about inland searches than a controller in Miami, FL).

2. Identify tasks that are not in the resident course that require training. Respondents did not clearly identify any tasks that are not already in the resident course that require training. Recommendations regarding new tasks were either for geographic specific functions (i.e., Great Lakes specific SAR training) or were changes to existing tasks (i.e., increase depth of documentation training). The resident course appears to cover all appropriate tasks that are of general interest or applicability throughout the

Coast Guard. Additional tasks can be added (or deleted) as circumstances and needs change. The respondents indicated a high degree of satisfaction with their skills after departing resident training.

The researcher anticipates that most controllers will require additional training to remain proficient at performing all of the tasks. However graduates, supervisors, controllers, and instructors indicated they were content with the resident course as it is currently arranged and the researcher could not identify any valid tasks (applicable Coast Guard wide) that were not already in the resident course.

3. Prepare a list of refresher course training tasks. A significant percentage of either controllers, instructors, or both agreed that each resident course task should be included in a refresher course. However, respondents clearly indicated a stronger preference for some tasks over others. Thus, although all of the tasks should be included in the refresher course, some are of higher priority. Developers should include the highest priority tasks if limited resources preclude producing a course that includes all of the tasks. Table 25 identifies refresher course task priority. Priority is based on the controller/instructor survey data displayed in Table 22.

Table 25 (Refresher Course Task Priorities)

Priority	Priority Description	Task List
First	Combined mean ≥ 3.5	1, 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 17, 26
Second	Combined mean ≥ 3.0	4, 15, 16, 18, 19, 22, 24,
Third	Combined mean ≤ 2.99	20, 21, 23, 25

Task list numbers refer to twenty-six listed tasks in Table 22.

Controllers and SAR school instructors identified only three tasks as not suitable for inclusion in a refresher course. They were Task 20 (Evaluate legal aspects), Task 21

(Provide public affairs/media briefing), and Task 25 (Plan assist in inland searches). They are listed in the prioritized table as priority three tasks.

4. Determine the recommended training format for the refresher course. The refresher course should be developed as a CBT system that supports unit level OJT. RCCs have modern desktop computers that are used to run various search planning programs. What they do not have is a standardized OJT program to support long-term controller training.

Why OJT? Although the data indicated graduates and controllers are basically proficient at most tasks, 31.57 percent of graduates indicated they wanted more training and 26.31 percent felt that OJT, instead of resident training, could better meet some of their training needs. Senior controllers overwhelmingly viewed a refresher course as beneficial. They are often tasked with performing training for the junior controllers. It is no surprise that they would like to have a standardized training tool that could alleviate some of their training burden. Controller familiarity with the computer systems, geographic isolation of the training sites from the resident school, stable task list/course content, and personnel/travel constraints suggest that a CBT refresher course will cost-effectively meet controller training needs. It can also address these areas of concern:

- Task training can be developed in modules and delivered as sections are completed, enabling developers to cover highest priority tasks first.
- Trainees can access only what they need. Clearly, survey data indicates the need for training, but training needs will vary from one unit/person to the next.

- Haphazard OJT can be replaced by systematic training that includes objective training performance tracking.
- CBT software can be loaded on the systems already installed or slated for installation at the RCCs.
- Controllers can effectively self-train during slow watches and when other personnel are not available to assist.
- Well designed CBT courses can also be used as electronic job aids, useful tools considering many tasks are infrequently performed.
- CBT can create effective scenarios to promote synergistic task performance.

5. Prepare the foundation for the creation of the refresher training course. The researcher prepared a draft refresher course curriculum (Appendum A) based on the original resident Maritime SAR Planning course. The curriculum outlines program aims, goals, and objectives for the controller refresher course. Further, the curriculum identifies basic course content, specific task objectives, and organizes course tasks into course modules. The draft refresher course curriculum was forwarded to the National SAR school for their review. Copies are available from the school or the researcher upon request (Appendum A).

Recommendations

The findings and conclusions of this study support the following recommendations regarding refresher training for RCC controllers:

1. The Coast Guard should develop a standardized refresher course that includes learning activities that will enable students to meet the learning objectives of the resident Maritime SAR Planners Course.

2. The refresher course should be interactive, self-paced, and provide users and their supervisors with data/performance retrieval capability. It should be consistent with other electronic SAR planning and control systems (i.e., CASP).

3. The refresher course should be developed for presentation via a distance learning medium. The researcher recommends a CBT system to enable the Coast Guard to capitalize on the significant investment already made in computer hardware/software at the RCCs. Using a CBT system also has a tangential benefit of helping controllers to develop their related computer skills.

4. The CBT refresher course should be consistent with the National SAR School's resident course. Worksheets, scenarios, and learning objectives should closely reflect the material presented by the SAR school. The refresher course should supplement rather that replace the resident course.

5. One module of the course should be developed using an off-the-shelf commercial authoring system. The module should be field tested at an RCC for format, ease of use, and accuracy. It should also be completed by a test group of students attending the resident course for timely comparison.

6. The final course should be prepared based upon the results of the module field test. Follow-on modules should be developed as resources permit and tested using the same steps as the initial module test.

BIBLIOGRAPHY

Bennet, G. J., & Clasper, T. D. (1993) Training evaluation. In G. M. Piskurich (Ed.), The ASTD handbook of instructional technology (p. 29.24-29.26). New York: McGraw-Hill.

Broadwell, M. M. (1993, October). Seven steps to building better training. Training, pp. 75-81.

Callahan, M. R. (1985). Computer-based learning: What, why and how (INFO-LINE No. 501). Alexandria, VA: American Society for Training and Development.

Campbell C. S., (1993) CAI 101. In G. M. Piskurich (Ed.), The ASTD handbook of instructional technology (p. 11.1-11.11). New York: McGraw-Hill.

Carnevalle, A. P. & Carnevalle, E. S. (1994, May). Growth patterns in workplace training. Training & Development, pp. 22-28.

Clark, R. C. (1989). Developing technical training: a structured approach for the development of classroom and computer-based instructional materials. Reading, MA: Addison-Wesley.

Fletcher, J. D. (1992). Courseware portability Alexandria, VA: Institute for Defense Analyses. (ERIC Document Reproduction Service No. ED 355 915)

Harbour, J. L., Byers, J. C., & Wilhelmsen, C. (1991, April). Hypermedia approach to a multiple design and development need: A case study. Performance & Instruction, 30(4), pp. 11-18.

Hart, F. A. (1987). Computer-based training. In R. L. Craig (Ed.), Training and development handbook (pp. 470-487). New York: McGraw-Hill.

Hasset, J. (1992, November). Predicting the cost of training. Training & Development, pp. 40-44.

Joint Chiefs of Staff. (1991). National Search and Rescue Manual (Joint Pub 3-50). Washington, DC: U.S. Coast Guard.

Kearsley, G. (1993). Costs and benefits of technology-based instruction. In G. M. Piskurich (Ed.), The ASTD handbook of instructional technology (pp. 16.1-16.19). New York: McGraw-Hill.

Knowles, M. (1980). The modern practice of adult education: From pedagogy to androgogy. (rev. ed.). Englewood Cliffs, NJ: Cambridge

Landry, M. (1994, December). Framework for change. U.S. Naval Institute Proceedings, pp. 71-74.

Liedtke, J. (1993, December). Multimedia technologies for education. The Technology Teacher, pp. 9-12, 21-22.

Magel, M. (1992, November). Selling your boss on the need for interactive multimedia. AV Video, pp. 1-4.

McCord, A. B. (1987). Job training. In R. L. Craig (Ed.), Training and Development Handbook (pp. 363-382). New York: McGraw-Hill.

Nelson, J. (1995). OJT: Get training on line fast. In, Training '95 Conference and Expo Proceedings (pp. 387-396). Atlanta, Georgia: Lakewood Conferences.

Ornstein, A. C., & Hunkins, F. (1993). Curriculum---foundations, principles, and issues (2nd Ed.). Boston: Allyn and Bacon.

Randall, (1986). Alternatives to lecture (INFO-LINE No. 602). Alexandria, VA: American Society for Training and Development. p. 1.

Senbetta, G. (1992). An inquiry of time and cost estimating for computer-based training courseware design and development as determined by the modified delphi method (time estimating) (Doctoral Dissertation, Purdue University, 1991). Dissertation Abstracts International, 52/07, 2395. (University Microfilms).

U.S. Coast Guard. (1991). Coast Guard Addendum to the National Search and Rescue Manual (COMDTINST M16130.2A). Washington, DC: U.S. Coast Guard.

U.S. Coast Guard (1991, August). Curriculum Outline for Class C Maritime SAR Planning Course. Washington, DC: U.S. Coast Guard.

U.S. Coast Guard Research and Development Center (1994). Training techniques and technology study; Draft phase 1 report (CG R&D Center 3900/748201). Groton, CT: U.S. Coast Guard.

U.S. Coast Guard Reserve Training Center Yorktown (1991, January 22). External Evaluation Policy. Yorktown, VA: U.S. Coast Guard.

U.S. Coast Guard National SAR School (1994). Maritime Search Planning Course Notebook. Yorktown, VA: U.S. Coast Guard.

U.S. Coast Guard Atlantic Area (1995, January). LANTAREANOTE 16100, FY 95 SAR Workshop. Governor's Island: New York

U.S. Coast Guard Atlantic Area (1995, April 7). FY 95 SAR Workshop Results. Governor's Island: New York

Zemke, R. & Zemke, S. (1988, July). 30 things we know for sure about adult learning. Training, pp. 58-61.

Appendices

APPENDIX A - RCC Area Of Responsibility Map

APPENDIX B - Sample SAR School Graduate Survey

APPENDIX C - Sample SAR School Supervisor Survey

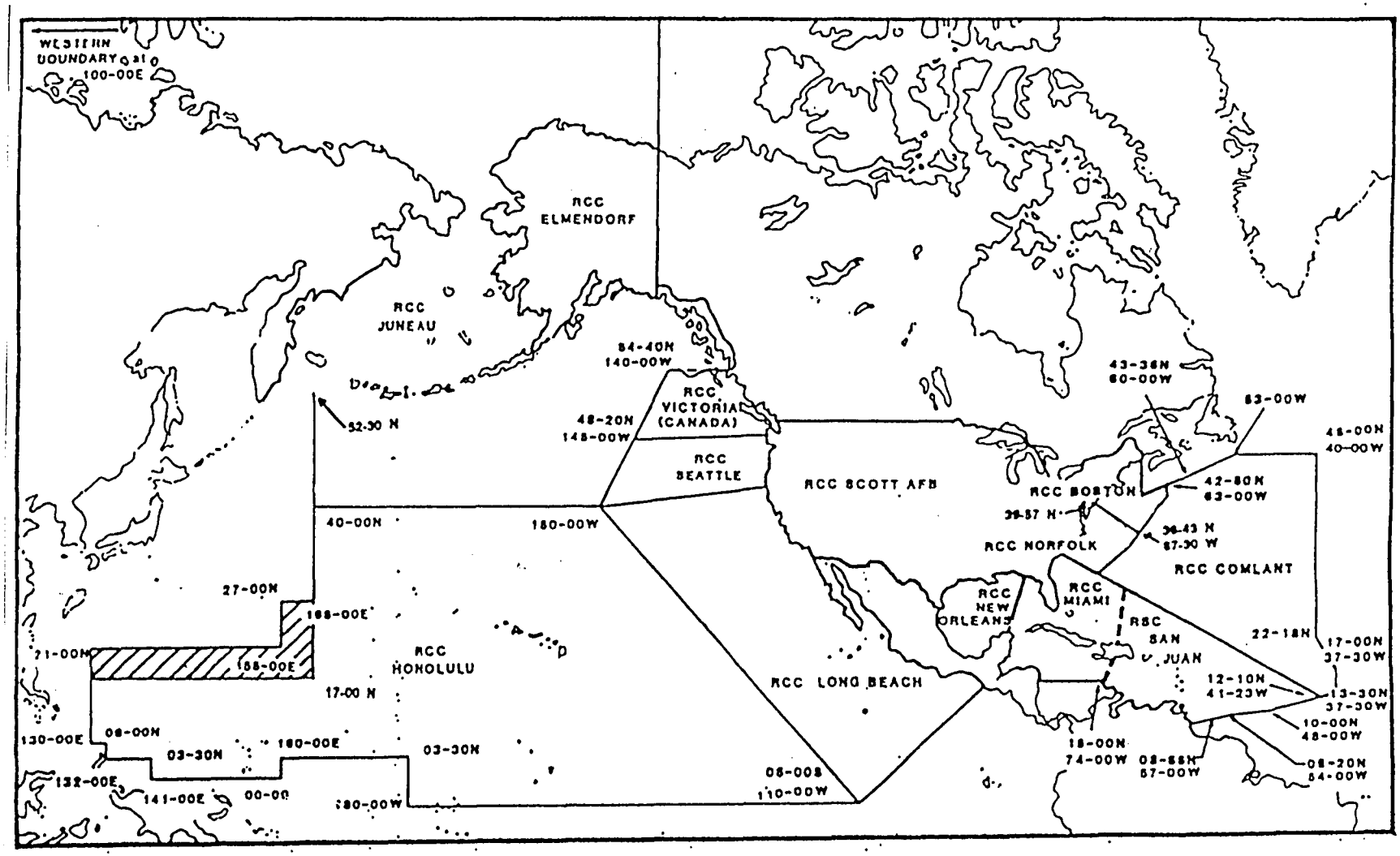
APPENDIX D - Sample SAR School Instructor/Workshop Attendee Survey

APPENDIX E - Fiscal Year 1995 SAR Workshop Results

APPENDIX F - Sample SAR School Survey Letter

APPENDIX A

RCC Area Of Responsibility Map



Area of SRR overlap between U.S. and Japan

* U.S. - U.S.S.R. regions in the Bering Sea are separated by a line which generally follows the U.S. - U.S.S.R. Maritime Boundary.

APPENDIX B

Sample SAR School Graduate Survey

Section I. Course Task Listing for Search and Rescue Planning Course.

Directions: Using the three scales shown below, please rate each of the following knowledges/performances.

FREQUENCY: How often do you perform the task?	IMPORTANCE: How important is the task to the mission?	ADEQUACY: How adequate was training for the job?
A. Do not perform/supervise the task	F. Do not perform/supervise the task	K. Does not perform the task
B. 10% of cases	G. Minimal value to the job	L. Extremely Limited
C. 25% of cases	H. Moderate value to the job	M. Partially Proficient
D. 50% of cases	I. Required for the job, but not essential	N. Competent
E. 75+% of cases	J. Critical to unit's mission	O. Highly Proficient

1. Determine Datum.						
a. Frequency:	☐ A.	☐ B.	☐ C.	☐ D.	☐ E.	
b. Importance:	☐ F.	☐ G.	☐ H.	☐ I.	☐ J.	
c. Adequacy:	☐ K.	☐ L.	☐ M.	☐ N.	☐ O.	
2. Determine Datum Minimax.						
a. Frequency:	☐ A.	☐ B.	☐ C.	☐ D.	☐ E.	
b. Importance:	☐ F.	☐ G.	☐ H.	☐ I.	☐ J.	
c. Adequacy:	☐ K.	☐ L.	☐ M.	☐ N.	☐ O.	
3. Determine Successive Datums.						
a. Frequency:	☐ A.	☐ B.	☐ C.	☐ D.	☐ E.	
b. Importance:	☐ F.	☐ G.	☐ H.	☐ I.	☐ J.	
c. Adequacy:	☐ K.	☐ L.	☐ M.	☐ N.	☐ O.	
4. Calculate Reversing Tidal Current.						
a. Frequency:	☐ A.	☐ B.	☐ C.	☐ D.	☐ E.	
b. Importance:	☐ F.	☐ G.	☐ H.	☐ I.	☐ J.	
c. Adequacy:	☐ K.	☐ L.	☐ M.	☐ N.	☐ O.	
5. Compute Sea Current.						
a. Frequency:	☐ A.	☐ B.	☐ C.	☐ D.	☐ E.	
b. Importance:	☐ F.	☐ G.	☐ H.	☐ I.	☐ J.	
c. Adequacy:	☐ K.	☐ L.	☐ M.	☐ N.	☐ O.	
6. Compute Wind Driven Current.						
a. Frequency:	☐ A.	☐ B.	☐ C.	☐ D.	☐ E.	
b. Importance:	☐ F.	☐ G.	☐ H.	☐ I.	☐ J.	
c. Adequacy:	☐ K.	☐ L.	☐ M.	☐ N.	☐ O.	
7. Calculate Leeway.						
a. Frequency:	☐ A.	☐ B.	☐ C.	☐ D.	☐ E.	
b. Importance:	☐ F.	☐ G.	☐ H.	☐ I.	☐ J.	
c. Adequacy:	☐ K.	☐ L.	☐ M.	☐ N.	☐ O.	
8. Determine Search Area Radius.						
a. Frequency:	☐ A.	☐ B.	☐ C.	☐ D.	☐ E.	
b. Importance:	☐ F.	☐ G.	☐ H.	☐ I.	☐ J.	
c. Adequacy:	☐ K.	☐ L.	☐ M.	☐ N.	☐ O.	
9. Describe Search Area.						
a. Frequency:	☐ A.	☐ B.	☐ C.	☐ D.	☐ E.	
b. Importance:	☐ F.	☐ G.	☐ H.	☐ I.	☐ J.	
c. Adequacy:	☐ K.	☐ L.	☐ M.	☐ N.	☐ O.	
10. Employ CASP.						
a. Frequency:	☐ A.	☐ B.	☐ C.	☐ D.	☐ E.	
b. Importance:	☐ F.	☐ G.	☐ H.	☐ I.	☐ J.	
c. Adequacy:	☐ K.	☐ L.	☐ M.	☐ N.	☐ O.	
11. Select Search Pattern.						
a. Frequency:	☐ A.	☐ B.	☐ C.	☐ D.	☐ E.	
b. Importance:	☐ F.	☐ G.	☐ H.	☐ I.	☐ J.	
c. Adequacy:	☐ K.	☐ L.	☐ M.	☐ N.	☐ O.	
12. Compute Sweep Width.						
a. Frequency:	☐ A.	☐ B.	☐ C.	☐ D.	☐ E.	
b. Importance:	☐ F.	☐ G.	☐ H.	☐ I.	☐ J.	
c. Adequacy:	☐ K.	☐ L.	☐ M.	☐ N.	☐ O.	

Section I. Course Task Listing for Search and Rescue Planning Course.(continued)

13. Allocate Effort.
    a. Frequency: ☐ A. ☐ B. ☐ C. ☐ D. ☐ E.
    b. Importance: ☐ F. ☐ G. ☐ H. ☐ I. ☐ J.
    c. Adequacy: ☐ K. ☐ L. ☐ M. ☐ N. ☐ O.

14. Compute Coverage Factor and POD.
    a. Frequency: ☐ A. ☐ B. ☐ C. ☐ D. ☐ E.
    b. Importance: ☐ F. ☐ G. ☐ H. ☐ I. ☐ J.
    c. Adequacy: ☐ K. ☐ L. ☐ M. ☐ N. ☐ O.

15. Maintain Documentation.
    a. Frequency: ☐ A. ☐ B. ☐ C. ☐ D. ☐ E.
    b. Importance: ☐ F. ☐ G. ☐ H. ☐ I. ☐ J.
    c. Adequacy: ☐ K. ☐ L. ☐ M. ☐ N. ☐ O.

16. Write SITREP.
    a. Frequency: ☐ A. ☐ B. ☐ C. ☐ D. ☐ E.
    b. Importance: ☐ F. ☐ G. ☐ H. ☐ I. ☐ J.
    c. Adequacy: ☐ K. ☐ L. ☐ M. ☐ N. ☐ O.

17. Write SAR Action Plan.
    a. Frequency: ☐ A. ☐ B. ☐ C. ☐ D. ☐ E.
    b. Importance: ☐ F. ☐ G. ☐ H. ☐ I. ☐ J.
    c. Adequacy: ☐ K. ☐ L. ☐ M. ☐ N. ☐ O.

18. Plan MEDEVAC.
    a. Frequency: ☐ A. ☐ B. ☐ C. ☐ D. ☐ E.
    b. Importance: ☐ F. ☐ G. ☐ H. ☐ I. ☐ J.
    c. Adequacy: ☐ K. ☐ L. ☐ M. ☐ N. ☐ O.

19. Plan Drift Compensated Search Pattern.
    a. Frequency: ☐ A. ☐ B. ☐ C. ☐ D. ☐ E.
    b. Importance: ☐ F. ☐ G. ☐ H. ☐ I. ☐ J.
    c. Adequacy: ☐ K. ☐ L. ☐ M. ☐ N. ☐ O.

20. Evaluate Legal Aspects.
    a. Frequency: ☐ A. ☐ B. ☐ C. ☐ D. ☐ E.
    b. Importance: ☐ F. ☐ G. ☐ H. ☐ I. ☐ J.
    c. Adequacy: ☐ K. ☐ L. ☐ M. ☐ N. ☐ O.

21. Provide Public Affairs/Media Briefing.
    a. Frequency: ☐ A. ☐ B. ☐ C. ☐ D. ☐ E.
    b. Importance: ☐ F. ☐ G. ☐ H. ☐ I. ☐ J.
    c. Adequacy: ☐ K. ☐ L. ☐ M. ☐ N. ☐ O.

22. Brief supervisor, CO/District Commander.
    a. Frequency: ☐ A. ☐ B. ☐ C. ☐ D. ☐ E.
    b. Importance: ☐ F. ☐ G. ☐ H. ☐ I. ☐ J.
    c. Adequacy: ☐ K. ☐ L. ☐ M. ☐ N. ☐ O.

23. Obtain resources from other Federal/State/Local Agencies.
    a. Frequency: ☐ A. ☐ B. ☐ C. ☐ D. ☐ E.
    b. Importance: ☐ F. ☐ G. ☐ H. ☐ I. ☐ J.
    c. Adequacy: ☐ K. ☐ L. ☐ M. ☐ N. ☐ O.

24. Obtain Interview respondents to develop case information.
    a. Frequency: ☐ A. ☐ B. ☐ C. ☐ D. ☐ E.
    b. Importance: ☐ F. ☐ G. ☐ H. ☐ I. ☐ J.
    c. Adequacy: ☐ K. ☐ L. ☐ M. ☐ N. ☐ O.

25. Plan or assist in inland searches (i. e. lost children).
    a. Frequency: ☐ A. ☐ B. ☐ C. ☐ D. ☐ E.
    b. Importance: ☐ F. ☐ G. ☐ H. ☐ I. ☐ J.
    c. Adequacy: ☐ K. ☐ L. ☐ M. ☐ N. ☐ O.

26. Prosecute Flare Sightings.
    a. Frequency: ☐ A. ☐ B. ☐ C. ☐ D. ☐ E.
    b. Importance: ☐ F. ☐ G. ☐ H. ☐ I. ☐ J.
    c. Adequacy: ☐ K. ☐ L. ☐ M. ☐ N. ☐ O.

Section III. Demographic Information. Mark answers in Section III.

1. How long since you attended resident training?
   - ☐ Less than 3 months
   - ☐ Between 3 - 6 months
   - ☐ Between 6 - 9 months
   - ☐ Between 9 - 12 months
   - ☐ Over 12 months

2. What type of unit are you currently assigned?
   - ☐ District/Area OPCEN
   - ☐ Group OPCEN
   - ☐ Small Boat Station
   - ☐ Air Station
   - ☐ Afloat

3. How long have you been at your unit?
   ☐ 0 - 6 months ☐ 6 months - year ☐ 1 - 2 years ☐ 2 - 3 years ☐ Over 3 years

4. Does your unit use SAR School's Search Planning Worksheets?
   ☐ Yes ☐ No

5. What SAR job do you do?
   - ☐ RCC Controller/Assist.
   - ☐ Group/Station OOD
   - ☐ Deck Watch Officer/Cox.
   - ☐ Pilot
   - ☐ OPS/Staff Officer

6. Is this SAR duty your primary or collateral job?
   ☐ Primary ☐ Collateral

7. How often do you perform duties as a SAR Planner?
   ☐ Daily ☐ Twice a week ☐ Weekly ☐ Twice a month ☐ Monthly

8. How long is the SAR Planning watch shift?
   ☐ 48 hours ☐ 24 hours ☐ 12 hours ☐ 8 hours ☐ Other

9. Do you directly supervise/oversee SAR Case Planning (Crunch Numbers)?
   ☐ Yes ☐ No

10. What is your units annual SAR Case load per year?
    ☐ Less than 250 ☐ 250 - 500 ☐ 501 - 750 ☐ 751 - 1000 ☐ More than 1000

11. How many cases a year does your unit use CASP?
    ☐ 0 - 10 ☐ 11 - 20 ☐ 21 - 30 ☐ 31 - 50 ☐ 51+

12. What is your pay grade?
    ☐ E4 to E6 ☐ E7 to E9 ☐ O1 to O2 ☐ O3 or CWOs ☐ O4 or above

13. How many years have you been at that pay grade?
    ☐ 0 - 6 months ☐ 6 months - 1 year ☐ 1 - 2 years ☐ 2 - 3 years ☐ Over 3 years

14. Have you been in other billets with SAR duties?
    ☐ Yes ☐ No

Section II: Critique of Training/Written Remarks.

This section provides you the opportunity to make candid comments about the training (you/the graduate) received. Your comments could affect the standard and content of our course.

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1. Are you satisfied with your skills since completion of training at RTC Yorktown?
   ☐ Yes ☐ No

2. Are there revisions that you would recommend in the instruction of this course that would more adequately prepare you to perform the job tasks?
   ☐ Yes ☐ No

3. Are there revisions that you would recommend in the instruction of this course that would make your job less difficult?
   ☐ Yes ☐ No

4. Are there any job tasks that you perform that are not taught in the course that you feel require training?
   ☐ Yes ☐ No

5. Are there any job tasks that you perform that are recommended for supervised on-the-job training rather than resident training?
   ☐ Yes ☐ No

6. Are there any job-related problems that you encountered at your unit that resident training has impacted?
   ☐ Yes ☐ No

7. Are there any job-related problems that you encountered at your unit that resident training has not impacted?
   ☐ Yes ☐ No

APPENDIX C

Sample SAR School Supervisor Survey

Section I. Course Task Listing for Search and Rescue Planning Course.

Directions: Using the three scales shown below, please rate each of the following knowledges/performances.

FREQUENCY: How often do you perform the task?	IMPORTANCE: How important is the task to the mission?	PROFICIENCY: How proficient is the graduate?
A. Do not perform/supervise the task	F. Do not perform/supervise the task	K. Does not perform the task
B. 10% of cases	G. Minimal value to the job	L. Extremely Limited
C. 25% of cases	H. Moderate value to the job	M. Partially Proficient
D. 50% of cases	I. Required for the job, but not essential	N. Competent
E. 75+% of cases	J. Critical to unit's mission	O. Highly Proficient

1. Determine Datum.
   a. Frequency: ☐ A. ☐ B. ☐ C. ☐ D. ☐ E.
   b. Importance: ☐ F. ☐ G. ☐ H. ☐ I. ☐ J.
   c. Proficiency: ☐ K. ☐ L. ☐ M. ☐ N. ☐ O.

2. Determine Datum Minimax.
   a. Frequency: ☐ A. ☐ B. ☐ C. ☐ D. ☐ E.
   b. Importance: ☐ F. ☐ G. ☐ H. ☐ I. ☐ J.
   c. Proficiency: ☐ K. ☐ L. ☐ M. ☐ N. ☐ O.

3. Determine Successive Datums.
   a. Frequency: ☐ A. ☐ B. ☐ C. ☐ D. ☐ E.
   b. Importance: ☐ F. ☐ G. ☐ H. ☐ I. ☐ J.
   c. Proficiency: ☐ K. ☐ L. ☐ M. ☐ N. ☐ O.

4. Calculate Reversing Tidal Current.
   a. Frequency: ☐ A. ☐ B. ☐ C. ☐ D. ☐ E.
   b. Importance: ☐ F. ☐ G. ☐ H. ☐ I. ☐ J.
   c. Proficiency: ☐ K. ☐ L. ☐ M. ☐ N. ☐ O.

5. Compute Sea Current.
   a. Frequency: ☐ A. ☐ B. ☐ C. ☐ D. ☐ E.
   b. Importance: ☐ F. ☐ G. ☐ H. ☐ I. ☐ J.
   c. Proficiency: ☐ K. ☐ L. ☐ M. ☐ N. ☐ O.

6. Compute Wind Driven Current.
   a. Frequency: ☐ A. ☐ B. ☐ C. ☐ D. ☐ E.
   b. Importance: ☐ F. ☐ G. ☐ H. ☐ I. ☐ J.
   c. Proficiency: ☐ K. ☐ L. ☐ M. ☐ N. ☐ O.

7. Calculate Leeway.
   a. Frequency: ☐ A. ☐ B. ☐ C. ☐ D. ☐ E.
   b. Importance: ☐ F. ☐ G. ☐ H. ☐ I. ☐ J.
   c. Proficiency: ☐ K. ☐ L. ☐ M. ☐ N. ☐ O.

8. Determine Search Area Radius.
   a. Frequency: ☐ A. ☐ B. ☐ C. ☐ D. ☐ E.
   b. Importance: ☐ F. ☐ G. ☐ H. ☐ I. ☐ J.
   c. Proficiency: ☐ K. ☐ L. ☐ M. ☐ N. ☐ O.

9. Describe Search Area.
   a. Frequency: ☐ A. ☐ B. ☐ C. ☐ D. ☐ E.
   b. Importance: ☐ F. ☐ G. ☐ H. ☐ I. ☐ J.
   c. Proficiency: ☐ K. ☐ L. ☐ M. ☐ N. ☐ O.

10. Employ CASP.
    a. Frequency: ☐ A. ☐ B. ☐ C. ☐ D. ☐ E.
    b. Importance: ☐ F. ☐ G. ☐ H. ☐ I. ☐ J.
    c. Proficiency: ☐ K. ☐ L. ☐ M. ☐ N. ☐ O.

11. Select Search Pattern.
    a. Frequency: ☐ A. ☐ B. ☐ C. ☐ D. ☐ E.
    b. Importance: ☐ F. ☐ G. ☐ H. ☐ I. ☐ J.
    c. Proficiency: ☐ K. ☐ L. ☐ M. ☐ N. ☐ O.

12. Compute Sweep Width.
    a. Frequency: ☐ A. ☐ B. ☐ C. ☐ D. ☐ E.
    b. Importance: ☐ F. ☐ G. ☐ H. ☐ I. ☐ J.
    c. Proficiency: ☐ K. ☐ L. ☐ M. ☐ N. ☐ O.

Section I. Course Task Listing for Search and Rescue Planning Course.(continued)

13. Allocate Effort.
    a. Frequency: ☐ A. ☐ B. ☐ C. ☐ D. ☐ E.
    b. Importance: ☐ F. ☐ G. ☐ H. ☐ I. ☐ J.
    c. Proficiency: ☐ K. ☐ L. ☐ M. ☐ N. ☐ O.

14. Compute Coverage Factor and POD.
    a. Frequency: ☐ A. ☐ B. ☐ C. ☐ D. ☐ E.
    b. Importance: ☐ F. ☐ G. ☐ H. ☐ I. ☐ J.
    c. Proficiency: ☐ K. ☐ L. ☐ M. ☐ N. ☐ O.

15. Maintain Documentation.
    a. Frequency: ☐ A. ☐ B. ☐ C. ☐ D. ☐ E.
    b. Importance: ☐ F. ☐ G. ☐ H. ☐ I. ☐ J.
    c. Proficiency: ☐ K. ☐ L. ☐ M. ☐ N. ☐ O.

16. Write SITREP.
    a. Frequency: ☐ A. ☐ B. ☐ C. ☐ D. ☐ E.
    b. Importance: ☐ F. ☐ G. ☐ H. ☐ I. ☐ J.
    c. Proficiency: ☐ K. ☐ L. ☐ M. ☐ N. ☐ O.

17. Write SAR Action Plan.
    a. Frequency: ☐ A. ☐ B. ☐ C. ☐ D. ☐ E.
    b. Importance: ☐ F. ☐ G. ☐ H. ☐ I. ☐ J.
    c. Proficiency: ☐ K. ☐ L. ☐ M. ☐ N. ☐ O.

18. Plan MEDEVAC.
    a. Frequency: ☐ A. ☐ B. ☐ C. ☐ D. ☐ E.
    b. Importance: ☐ F. ☐ G. ☐ H. ☐ I. ☐ J.
    c. Proficiency: ☐ K. ☐ L. ☐ M. ☐ N. ☐ O.

19. Plan Drift Compensated Search Pattern.
    a. Frequency: ☐ A. ☐ B. ☐ C. ☐ D. ☐ E.
    b. Importance: ☐ F. ☐ G. ☐ H. ☐ I. ☐ J.
    c. Proficiency: ☐ K. ☐ L. ☐ M. ☐ N. ☐ O.

20. Evaluate Legal Aspects.
    a. Frequency: ☐ A. ☐ B. ☐ C. ☐ D. ☐ E.
    b. Importance: ☐ F. ☐ G. ☐ H. ☐ I. ☐ J.
    c. Proficiency: ☐ K. ☐ L. ☐ M. ☐ N. ☐ O.

21. Provide Public Affairs/Media Briefing.
    a. Frequency: ☐ A. ☐ B. ☐ C. ☐ D. ☐ E.
    b. Importance: ☐ F. ☐ G. ☐ H. ☐ I. ☐ J.
    c. Proficiency: ☐ K. ☐ L. ☐ M. ☐ N. ☐ O.

22. Brief your supervisor, CO/District Commander.
    a. Frequency: ☐ A. ☐ B. ☐ C. ☐ D. ☐ E.
    b. Importance: ☐ F. ☐ G. ☐ H. ☐ I. ☐ J.
    c. Proficiency: ☐ K. ☐ L. ☐ M. ☐ N. ☐ O.

23. Obtain resources from other Federal/State/Local Agencies.
    a. Frequency: ☐ A. ☐ B. ☐ C. ☐ D. ☐ E.
    b. Importance: ☐ F. ☐ G. ☐ H. ☐ I. ☐ J.
    c. Proficiency: ☐ K. ☐ L. ☐ M. ☐ N. ☐ O.

24. Obtain Interview respondents to develop case information.
    a. Frequency: ☐ A. ☐ B. ☐ C. ☐ D. ☐ E.
    b. Importance: ☐ F. ☐ G. ☐ H. ☐ I. ☐ J.
    c. Proficiency: ☐ K. ☐ L. ☐ M. ☐ N. ☐ O.

25. Plan or assist in inland searches (i. e. lost children).
    a. Frequency: ☐ A. ☐ B. ☐ C. ☐ D. ☐ E.
    b. Importance: ☐ F. ☐ G. ☐ H. ☐ I. ☐ J.
    c. Proficiency: ☐ K. ☐ L. ☐ M. ☐ N. ☐ O.

26. Prosecute Flare Sightings.
    a. Frequency: ☐ A. ☐ B. ☐ C. ☐ D. ☐ E.
    b. Importance: ☐ F. ☐ G. ☐ H. ☐ I. ☐ J.
    c. Proficiency: ☐ K. ☐ L. ☐ M. ☐ N. ☐ O.

Section II: Critique of Training/Written Remarks.

This section provides you the opportunity to make candid comments about the training (you/the graduate) received. Your comments could affect the standard and content of our course.

---

1. Are you satisfied with the graduate's skills since completion of training at RTC Yorktown?
   ☐ Yes ☐ No

2. Are there revisions that you would recommend in the instruction of this course that would more adequately prepare the graduate to perform the job tasks?
   ☐ Yes ☐ No

3. Are there revisions that you would recommend in the instruction of this course that would make the graduate's job less difficult?
   ☐ Yes ☐ No

4. Are there any job tasks that the graduate perform(s) that are not taught in the course that you feel require training?
   ☐ Yes ☐ No

5. Are there any job tasks that the graduate perform(s) that you would recommend for supervised on-the-job training rather than resident training?
   ☐ Yes ☐ No

6. Are there any job-related problems that you encountered at your unit that resident training has impacted?
   ☐ Yes ☐ No

7. Are there any job-related problems that you encountered at your unit that resident training has not impacted?
   ☐ Yes ☐ No

Section III. Demographic Information. Mark answers in Section III.

1. How long since the graduate attended resident training?
   - ☐ Less than 3 months
   - ☐ Between 3 - 6 months
   - ☐ Between 6 - 9 months
   - ☐ Between 9 - 12 months
   - ☐ Over 12 months

2. What type of unit is the graduate currently assigned?
   - ☐ District/Area OPCEN
   - ☐ Group OPCEN
   - ☐ Small Boat Station
   - ☐ Air Station
   - ☐ Afloat

3. How long has the graduate been at the unit?
   ☐ 0 - 6 months ☐ 6 months - year ☐ 1 - 2 years ☐ 2 - 3 years ☐ Over 3 years

4. Does the unit use SAR School's Search Planning Worksheets?
   ☐ Yes ☐ No

5. What SAR job does the graduate do?
   - ☐ RCC Controller/Assist.
   - ☐ Group/Station OOD
   - ☐ Deck Watch Officer/Cox.
   - ☐ Pilot
   - ☐ OPS/Staff Officer

6. Is this SAR duty a primary or collateral job?
   ☐ Primary ☐ Collateral

7. How often does the graduate perform duties as a SAR Planner?
   ☐ Daily ☐ Twice a week ☐ Weekly ☐ Twice a month ☐ Monthly

8. How long is the SAR Planning watch shift?
   ☐ 48 hours ☐ 24 hours ☐ 12 hours ☐ 8 hours ☐ Other

9. Do you directly supervise/oversee SAR Case Planning (Crunch Numbers)?
   ☐ Yes ☐ No

10. What is the graduate's units annual SAR Case load per year?
    ☐ Less than 250 ☐ 250 - 500 ☐ 501 - 750 ☐ 751 - 1000 ☐ More than 1000

11. How many cases a year does the graduate's unit use CASP?
    ☐ 0 - 10 ☐ 11 - 20 ☐ 21 - 30 ☐ 31 - 50 ☐ 51+

12. What is the graduate's pay grade?
    ☐ E4 to E6 ☐ E7 to E9 ☐ O1 to O2 ☐ O3 or CWOs ☐ O4 or above

13. How many years have you been at that pay grade?
    ☐ 0 - 6 months ☐ 6 months - 1 year ☐ 1 - 2 years ☐ 2 - 3 years ☐ Over 3 years

14. Have you been in other billets with SAR duties?
    ☐ Yes ☐ No

APPENDIX D

Sample SAR School Instructor/Workshop Attendee Survey

Section I. Course Task Listing for SAR Controller Refresher Training via Computer.

I am trying to identify and prioritize the tasks that might be included in a SAR Planner Refresher Course. Also, I'm looking at developing the course as a Computer-Based Tutorial (CBT). Since CBT can be expensive and time consuming to develop (300-400 development hour per course hour) I am interested in trying to capture the most important course elements first. I would also like to find out any potential training objectives that are needed but are not currently met by the resident course, so please add any tasks you feel should be included or break down current tasks into smaller instructional blocks if that is more appropriate.

Directions: Using the scale shown below, represent your value judgment of the indicated tasks regarding this statement:
* *
TASK needs to be included in a Computer-Based SAR Planner Refresher Course:

A. Strongly Disagree
B. Disagree
C. Unsure
D. Agree
E. Strongly Agree

* *

1. Determine Datum.

☐ A. ☐ B. ☐ C. ☐ D. ☐ E.

2. Determine Datum Minimax.

☐ A. ☐ B. ☐ C. ☐ D. ☐ E.

3. Determine Successive Datums.

☐ A. ☐ B. ☐ C. ☐ D. ☐ E.

4. Calculate Reversing Tidal Current.

☐ A. ☐ B. ☐ C. ☐ D. ☐ E.

5. Compute Sea Current.

☐ A. ☐ B. ☐ C. ☐ D. ☐ E.

6. Compute Wind Driven Current.

☐ A. ☐ B. ☐ C. ☐ D. ☐ E.

7. Calculate Leeway.

☐ A. ☐ B. ☐ C. ☐ D. ☐ E.

8. Determine Search Area Radius.

☐ A. ☐ B. ☐ C. ☐ D. ☐ E.

9. Describe Search Area.

☐ A. ☐ B. ☐ C. ☐ D. ☐ E.

10. Employ CASP.

☐ A. ☐ B. ☐ C. ☐ D. ☐ E.

11. Select Search Pattern.

☐ A. ☐ B. ☐ C. ☐ D. ☐ E.

12. Compute Sweep Width.

☐ A. ☐ B. ☐ C. ☐ D. ☐ E.

Section I. Course Task Listing for SAR Controller Refresher Training via Computer. (continued)

13. Allocate Effort. ☐ A. ☐ B. ☐ C. ☐ D. ☐ E.

14. Compute Coverage Factor and POD. ☐ A. ☐ B. ☐ C. ☐ D. ☐ E.

15. Maintain Documentation. ☐ A. ☐ B. ☐ C. ☐ D. ☐ E.

16. Write SITREP. ☐ A. ☐ B. ☐ C. ☐ D. ☐ E.

17. Write SAR Action Plan. ☐ A. ☐ B. ☐ C. ☐ D. ☐ E.

18. Plan MEDEVAC. ☐ A. ☐ B. ☐ C. ☐ D. ☐ E.

19. Plan Drift Compensated Search Pattern. ☐ A. ☐ B. ☐ C. ☐ D. ☐ E.

20. Evaluate Legal Aspects. ☐ A. ☐ B. ☐ C. ☐ D. ☐ E.

21. Provide Public Affairs/Media Briefing. ☐ A. ☐ B. ☐ C. ☐ D. ☐ E.

22. Brief supervisor, CO/District Commander. ☐ A. ☐ B. ☐ C. ☐ D. ☐ E.

23. Obtain resources from other Federal/State/Local Agencies. ☐ A. ☐ B. ☐ C. ☐ D. ☐ E.

24. Obtain Interview respondents to develop case information. ☐ A. ☐ B. ☐ C. ☐ D. ☐ E.

25. Plan or assist in inland searches. ☐ A. ☐ B. ☐ C. ☐ D. ☐ E.

26. Prosecute Flare Sightings. ☐ A. ☐ B. ☐ C. ☐ D. ☐ E.

Section II: General Questions:

1. Graduates leave the SAR Planners Course with adequate skills to do their jobs as controllers.
   ☐ A. ☐ B. ☐ C. ☐ D. ☐ E.

2. Controllers would benefit from a CBT SAR Planner Refresher Course.
   ☐ A. ☐ B. ☐ C. ☐ D. ☐ E.

3. Any other Tasks that should be included???? Anything else I missed?????

Section III. Demographic Information.

1. What type of unit are you currently assigned to (Select one)?
   ☐ District/Area Command Center
   ☐ Group OPCEN
   ☐ Area/District Office
   ☐ Other

2. What SAR job do you do?
   ☐ RCC Controller/Assist ☐ Group OOD ☐ OPS/Staff Officer ☐ Other

3. Do you directly perform or oversee SAR Planning?
   ☐ Yes ☐ No

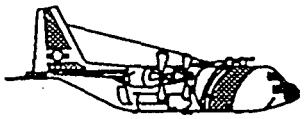
APPENDIX E

Fiscal Year 1995 SAR Workshop Results

U. S. COAST GUARD

ATLANTIC AREA

COMMAND CENTER



FY95 SEARCH AND RESCUE WORKSHOP

RESULTS

U.S. Department of Transportation

United States Coast Guard

Commander U.S. Coast Guard
Atlantic Area

Governors Island
New York, NY 10004
Staff Symbol: Acc
Phone: 212-668-7055

5721
APR 7 1995

From: Commander, U.S. Coast Guard Atlantic Area
To: Distribution

Subj: FY95 SAR WORKSHOP RESULTS

1. Enclosed are the results of the workshop.

2. As a reminder, the ultimate success of the workshop depends on each command making use of the workshop results and recommended dispositions.

3. Should you have any further input/comments, address them by e-mail to LT A MLETZKO/LANTACC.

G. E. LEBER
By direction

Encl: (1) Workshop Results
(2) Critique Results
(3) GMDSS Training Report

Dist:

G-KSE	G-NRS
G-TTM	MLCLANT (v, t)
PACAREA (Po, Pcc)	RCC Halifax
CCGD1 (osr, cc)	IIP
CCGD2 (osr, cc)	USMCC
CCGD5 (osr, cc)	RCC Bermuda
CCGD7 (osr, cc)	AFRCC
CCGD8 (osr, cc)	AIRSTA Kodiak
CCGD9 (osr, cc)	AIRSTA Elizabeth City
CCGD11 (osr, cc)	AIRSTA Clearwater
CCGD13 (osr, cc)	CG LALB
CCGD14 (osr, cc)	CG Group Miami, Fl
CCGD17 (osr, cc)	GG Group Woods Hole, Ma
GANTSEC	STA Saginaw River
MARSEC	FACSFAC VACAPES
OSC	RCC Victoria
EECEN	NAVSECGRUACT NW
National SAR School	SUPRTCEN NY (a-p)
R&D Center	

PROPOSED AGENDA ITEM NUMBER: 06

UNIT AGENDA ITEM NUMBER: CPA-02, D13-01, D14-02, ACC-05, ACC-06

TOPIC: SAR SCHOOL CURRICULUM

DISCUSSION:

1. SAR School curriculum continues to emphasize the manual solution, a skill that is rarely used at CC's, instead of providing more complete training on GMDSS, CASP 1.1, SAR Policy, and the PRIME Systems.

2. Search planning skills required of a Group watchstander are extremely different from that of a CC watchstander.

AGENDA PROPOSAL:

1. Evaluate SAR School Curriculum and submit recommended changes to SAR School.

WORKSHOP RESULTS:

1. CDR Rudolph provided the group with a SAR School curriculum overview, including a review of the revised curriculum. The updated program should be on-line by June (in time for the summer transfer season). Major changes include:

a. Replacing manual work (universal plot sheet, chart work, etc...) with GDOC, CASP (CASP will be appropriate for the level of needed skill) and automated manual solution.

b. Integrating automated manual solution into curriculum with increased emphasis on gaming/technology aids. Intend to cover theory/basics in class followed by work in lab to build basics, then back to class, followed by work in teams/groups to prosecute cases in RCC mock-up space.

2. Based on a Commandant mandate, SAR School needs to ensure both Group and District/Area OPCEN/RCC personnel can be trained in joint classrooms. However, Groups and Command Center controllers will receive instruction better tailored to meet their particular requirements. SAR School will cluster Group controllers and Command Center controllers into separate groups so that they can emphasize, in "real-world" mock-ups using actual scenarios/cases, those skills and tasks typically performed by that group. The school is very interested in collecting Group/District/Area desires regarding SAR School programs and objectives.

Brainstorming Ideas/Issues.

a. SAR School Training (technology integration).

b. ID Group/District roles, including tool availability, use, type. etc.

c. ID specific needs.

d. ID skill expectations. Includes entry level skills required for job.

e. Need to plan for the impact of international students on school curriculum.

f. ID basic knowledge, policy, QRC's, and SAR Process training needed to make "SAR Professionals". WHAT IS THE END PRODUCT with SAR School viewed as just one piece of the pie.

g. Improve information sharing by districts.

h. Possible RCC Stand Team. Are we training well enough and meeting needs of SAR Professionals (Education vice Training)? An individual needs "education" to really understand and judge a computer generated solution.

i. Boost aeronautical SAR skills (escort services, ditched aircraft, ship/aircraft communications, Coast Guard airport emergency plans for aircraft in the water, and interface between Coast Guard RCC and air traffic control system). Why? 200-300 cases/year are aviation related.

j. SAR professionalism.

3. ID Outward Skills (Group OPCENTER). Brainstormed list translated into current/potential skills/training goals that SAR School is or should address. Participants identified these as skills needed by controllers preparing for duties in current Command Centers.

a. Less emphasis on completing manual solution worksheets and more emphasis on timely case management.

b. Good understanding of risk management process. Included in first two weeks of school. Incorporated throughout process. Practical cases need to reflect need to both support units onscene with the ability to not take away all of their flexibility.

c. Prospective controllers should go to SAR School with some minimum skills (prerequisites). SAR School is seeing recent attendees arriving without the math and reading skills needed to successfully complete the course. SAR School plans on including a notice letter to students on basic skills required for success in the school. This letter includes self-tests (voluntary) for completion by the candidate prior to arrival to check competencies/

skills. The SAR School is working to capture information on those students having difficulty. Problem students tend to be prospective Group Controllers or international students.

4. Delete unnecessary CASP training.

5. Provide needed GDOC skills.

6. Training for cases where search object can't be found. In other words, prepare the future controller to evaluate and prosecute a case that ends in suspension.
Includes next of kin notification.

7. Public Affairs skills.

Covered adequately in current and future curriculum. Training will be geared to providing briefs during gaming/scenario situations.

8. ID outward skills (Command Center). Brainstormed list translated into current/potential skills that SAR School is or should address. Participants identified these skills as those needed by controllers preparing for duties in current technologically intensive SAR planning (SAR School response/input noted after item when provided). Controllers need to be:

a. Literate in GDOC/CASP Framework.

b. Less dependent on manual worksheets.

c. Aware of the Global Maritime Distress and Safety Systems (GMDSS) "framework".

d. AMVER program literate.

e. SAR Policy literate.

f. Functionally and operationally aware of SAR resources and technological aids to include SAR R&D, Tech development, SLDMB-IIP, SARSAT, facilities and sensors.

g. Have public affairs skills.

h. Be aware of and understand the capabilities and use of various SAR resources.

SAR Topics Related to Current/Future SAR training:

1. <u>SAR Professionalism</u>. Participants addressed SAR professionalism separate from those issues SAR School can address in their curriculum. Group consensus is that SAR professionalism is on the wane and should be addressed by program and operational

commanders. Personnel are transferred from "SAR Duties" shortly after they finish ramping up. Broad levels of training no longer exist in the Coast Guard. Is the Coast Guard going to keep SAR as a central mission? If so then more effort needs to be placed into training, service-wide professionalism and general SAR skills.

2. How do we address these deficiencies?

a. We need to emphasize SAR Training vice Education. SAR education should be provided to give our SAR professionals a broad base in SAR fundamentals. Without a broad SAR education, new generations of SAR controllers are hard-pressed to integrate competencies and skills received in training into their professional "tool-bag". SAR Education provides the basis for understanding and recognizing important and relevant SAR tasks and responsibilities. SAR training stresses basic competencies and skills that can be evaluated (key skill in our modern computer generated solution age) against the broader educational background.

b. International SAR Training. Discussion focused on need to identify and prepare other nations to perform national SAR assessments, and set up national SAR organizations w/required legislative/legal framework for SAR. As part of this process we need to perform more detailed assessments including which countries would most benefit from U.S. SAR support.

Bottom Line: *If* Nation Building via SAR is important, then increased proactivity by Coast Guard---including chartering a natural working group to review both resident and exportable SAR training, is needed. Include regular SAR training reviews and perhaps an international SAR training forum to promote U.S. and other national SAR organizations. Although some agreement was reached this was not a consensus viewpoint.

POC: LCDR P. Dietrich (SAR School) 804-898-2380

PROPOSED AGENDA ITEM NUMBER: 07

UNIT AGENDA ITEM NUMBER: D11-07, CPA-02, GANT-03, ACC-13

TOPIC: RECURRENT SAR TRAINING

DISCUSSION:

1. The standard for entry level SMC training is clearly delineated in the National SAR Manual. There is no standard for recurrent training.

2. Many units have self-trained experts on SAR systems. Their knowledge is currently not being shared outside of their unit. There are also SAR meetings and workshops the CC's might attend but there exists a lack of awareness of such meetings.

AGENDA PROPOSAL:

1. Determine need for recurrent training for CC watchstanders.

2. Draft list of annual meetings that could provide recurrent training to watchstanders.

3. Identify unit SAR system experts that could provide recurrent training.

WORKSHOP RESULTS:

1. See Agenda Item #6.

POC: LCDR P. Dietrich (SAR School) 804-898-2380

PROPOSED AGENDA ITEM NUMBER: 08

UNIT AGENDA ITEM NUMBER: D11-07, CPA-02

TOPIC: WATCHSTANDER PQS

DISCUSSION:

1. Current watchstander JQR is different at each CC.

AGENDA PROPOSAL:

1. Develop a standardized JQR that is generic and allows for CC-specific items to be added. Evaluate if generic JQR developed at last year's LANTAREA SAR Workshop is applicable.

WORKSHOP RESULTS:

1. See Agenda Item #9.

PROPOSED AGENDA ITEM NUMBER: 09

UNIT AGENDA ITEM NUMBER: CPA-02

TOPIC: SAR SCHOOL CORRESPONDENCE COURSE

DISCUSSION:

1. The correspondence SAR Course is long, difficult and includes none of the new technologies available to watchstanders.

AGENDA PROPOSAL:

1. Evaluate current correspondence course and submit recommended changes to SAR School.

WORKSHOP RESULTS:

1. Matrix development. The group developed matrices to show SAR population, training needs, and the best way to fill those needs:

POPULATION "SAT/UNSAT" indicates if current program is OK/not OK	RESIDENT MARITIME SAR PLANNER	JQR/PQS	BETTER CORR. COURSE	OTHER TRAINING (PIPELINE.?)
SAR PLANNERS Dist.Area.Gru's "SAT"	Required	Required		
Small Boat Cox "SAT"		Required	Needed	Required
DWO "SAT"		Required	Needed	
WPB CO "UNSAT"			Needed	
Cutter OPS "UNSAT"			Needed	
STA OOD "UNSAT"		Required	Needed	
GROUP OPS "UNSAT"	Required		Needed	
STA OINC "SAT"		Required	Needed	
Aviators "SAT"		Required	Needed	

RECOMMENDED DISPOSITION:

a. SAR School should make instructional aids (lesson plans and training aids) available to field units that do not usually participate/attend resident training. Benefit: Ease difficulty of field units in developing/maintaining PQS programs and improve uniformity of product.

b. Include a training section in On Scene and other publications to promulgate training information and collect feedback. This should be similar to the MLE Bulletin but oriented for the SAR community.

c. Improve effectiveness of SAR School IOT measure the success of their program. Field units need to complete and return graduate/supervisor surveys, provide "spot" input to the school (phone) as needed, and forward suggestions in a timely fashion.

POC: LCDR P. Dietrich (SAR School) 804-898-2380

PROPOSED AGENDA ITEM NUMBER: 12

UNIT AGENDA ITEM NUMBER: CPA-04, D7-04, ACC-25

TOPIC: GDOC

DISCUSSION:

1. GDOC has improved CC search planning capabilities. Further advances could be realized if GDOC capability were available at groups and air stations and if CC's could transmit data between each other.

2. Many CC's have used GDOC capability for missions other than SAR.

AGENDA PROPOSAL:

1. Discuss ways for CC's to increase GDOC exchange of information.

2. Discuss ways to provide GDOC to groups and air stations.

3. Identify different uses of GDOC.

WORKSHOP RESULTS:

1. Groups and air stations will get GDOC capability with the CGSW III contract. These computers will be compatible with the windows programs.

2. A cross program configuration and control board is required to support the GDOC system. This implies that cross program support for GDOC as the Command & Control computer is necessary as well.

3. The identification of funding and resources for hotline support is required.

4. The continuation of the quarterly GDOC/CASP workshops at OSC Martinsburg or SAR School is essential for recurrent training of CC watchstanders.

RECOMMENDED DISPOSITION:

1. Recommend that EECEN test and evaluate GDOC on the CGSW III operating system. OSC will fund testing and evaluation.

2. Recommend G-NRS work towards cross program configuration and control board and promote GDOC as a cross program command and control system.

3. Recommend G-NRS fund hotline support.

4. Recommend the continued funding of quarterly CASP/GDOC training at OSC or SAR school.

not able to conduct due to reduced personnel

POC: LT W. Meese (D5CC) 804-398-6390

APPENDIX F

Sample SAR School Survey Letter

From: Commandant
To: CO, (*enter UNIT address*)

Subj: (*COURSE NAME*) COURSE EXTERNAL EVALUATION

1. This survey is to validate the training received at the (*enter Course Name*) Course by comparing it with actual job performance. Your responses will enable us to measure the match between the training objectives and the job tasks and the skill level of the course graduate. Your feedback is critical. The results of this evaluation can directly affect the skills and knowledges taught at Reserve Training Center Yorktown which, in turn, enable you to complete mission requirements.

2. Enclosed are two copies of the (*enter Job Title*) External Evaluation Survey: one to be completed by the graduate, *(enter graduate's name)*, and the other by his/her immediate supervisor.

3. Please complete the surveys within 15 days, or if deployed, within 15 days of your return to homeport. Return them in the envelope provided. If you have any questions or additional input, please contact (*enter point of contact and school*), FTS 827-xxxx or (804) 898-xxxx.

4. Thank you for your assistance.

(*Flag Sponsorship*)
By direction