

Guidelines for Establishing Open-Water Recreational Beach Standards
Proceedings of a Conference
April 16-18, 1981
Galveston, Texas

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GUIDELINES FOR ESTABLISHING
OPEN-WATER RECREATIONAL BEACH STANDARDS

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PROCEEDINGS OF A CONFERENCE

APRIL 16-18, 1980

GALVESTON, TEXAS

edited by

James M. McCloy and James A. Dodson

Center for Marine Training and Safety

Coastal Zone Laboratory

Texas A&M University at Galveston

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August 1981

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JMM

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FOREWORD

Various efforts have been made to formulate national standards for protective and rescue services at open-water recreational beaches in the United States. Some of these efforts are still underway. Standards for such services have been set in a rather piecemeal fashion by organizations and agencies involved in aquatic training and safety. In essence, these groups have been working independently toward a common goal. In an attempt to focus and coordinate these several efforts, a conference was held in Galveston, Texas, on April 16-18, 1980. The conference brought together many of the interested parties to discuss the basic elements deemed essential to the establishment of any future national standards for open-water recreational beaches.

The "Conference to Develop Guidelines for Establishing Open-water Recreational Beach Standards" was hosted by the Center for Marine Training and Safety of the Coastal Zone Laboratory of Texas A&M University at Galveston. The conference was co-sponsored by the American Camping Association, United States Lifesaving Association and the Council for National Cooperation in Aquatics. The Texas A&M Sea Grant College Program, the American Camping Association and The Moody Foundation provided the generous support that made the meeting possible. Participants included invited representatives from major organizations in the United States that deal with water safety and aquatic education, as well as people from various governmental agencies that provide safety services at public open-water recreational beaches.

WELCOME

The Honorable A. R. "Babe" Schwartz, state senator from the 17th District of Texas, welcomed the conference participants after an introduction by Dr. William H. Clayton, president of Texas A&M University at Galveston. Sen. Schwartz is either the author or co-author of most of the legislation pertaining to the Texas Coast. He is the chairman of the Texas Coastal and Marine Council and the Texas representative to and former chairman of the Coastal States Organization.

Sen. Schwartz noted that the lives of people who use the open-water beaches of the United States should be protected by good beach management programs. In addition, management programs are needed that protect and preserve, even improve, the environment. He remarked that no public facility should ever be open for the benefit and attraction of the people without protection -- that is, a lifeguard is often more important than a park ranger. When the public is invited to participate in activities on the beaches, to enter the water, and, in a sense, to risk their lives in activities that they are not accustomed to, they deserve protection by well-trained, capable lifeguards. Lifeguards should be governed by acceptable minimum standards and the public should be able to expect standardized protective and rescue services. The Senator concluded by stating that the most important objective of the conference should be to reduce the number of people who are injured or die while using open-water

recreational facilities. The promulgation of guidelines for the development of standards for the safe operation of these beaches will be a most important step toward achieving this objective.

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INTRODUCTION

The beaches and nearshore waters of United States' rivers, lakes and oceans provide recreation for millions of persons each year. Inherent in some activities at recreational open-water beaches is the exposure to health risks, particularly the major hazards of drowning or near-drowning. Protecting the health and safety of visitors to these locations has become a significant problem for private organizations and for local, state and federal agencies that own or manage open-water recreational beaches. Some of the main problem areas that have been identified as affecting the provision of safety services at open-water beaches include liability and risk management, adequacy and uniformity of services rendered at various locations, lifeguard qualifications and in-service training and funding of lifeguard services.

Liability and Risk Management. The legal liability of the organization or agency that manages recreational beaches or administers safety services and the liability of the individuals who actually perform the duties are a direct concern of all who are involved in providing these services. The excessive number of claims and lawsuits against persons and agencies providing the protection at open-water beaches imposes additional costs for the operation of these services in terms of increased insurance coverage, legal fees, and time spent away from the primary responsibility of the lifeguard -- protection of beach users.

As a result of the current situation of claims and lawsuits that

arise from incidents involving preventive and rescue services, the insurance industry is beginning to look closely at the risk management alternatives before offering liability coverage to the organizations and agencies that provide these services. In some cases, continued coverage may be contingent upon a determination of risk potential at the open-water recreational beach and an analysis of the management and operation of the protective services at that location. Should this occur, the insurance carriers would then be imposing their own standards on open-water recreational beaches by virtue of their internal policies for underwriting the liability of the lifeguard operations. That these standards and operational policies required by individual insurance companies are based on sound and accurate professional knowledge of the field is open to serious question.

By serving as a benchmark from which to assess the effectiveness of individual operations, standards should help to protect the provider from unwarranted claims. That is, it could be demonstrated that qualified individuals who were adequately trained, afforded "reasonable care" to the population at risk. Also, standards developed by the people most familiar with the environmental processes, preventive and rescue techniques, and operational systems -- i.e., the organizations and agencies providing the services such as the American Camping Association and the United States Lifesaving Association -- can provide the insurance carriers with the best possible guidelines for risk assessment and underwriting purposes (1,2).

Quality and Uniformity. There is much variation in the level, quality and operational methodology of safety services that are provided to users of open-water recreational beaches in the United States. The reasons for the disparities in the services rendered include:

management by historical precedence; the geographic isolation of particular areas, both spatially and in the sense of being "out of touch" with the techniques currently practiced by other operations; public and political control of financial resources; and inadequate organizational structures. Too often there is a lack of commitment to or a misunderstanding of the concept of reasonable care on the part of the agency or organization that provides the services. Standards would establish the minimum acceptable level and quality of services that should be provided. If the protective and rescue operations did not meet acceptable standards, then guidelines that prescribed criteria and methodologies could be used to achieve a level and quality of services that would meet the prudent citizen's expectations.

Lifeguard Qualifications and In-Service Training. The most discussed and controversial aspects of standards development are lifeguard qualifications and training. Different environmental and energy conditions require different levels of skills and physical conditioning. There can be no single standard for lifeguard certification. The several national organizations that are concerned with this problem must develop and maintain skill and training levels commensurate with their needs. This document provides general guidelines for qualifications and training. Particular national standards must be developed by the organizations that need them.

Funding. Lack of funding is a significant obstacle to providing the requisite level of protection at many beaches, both public and private. Because these services are often viewed by funding agencies as inessential or of marginal local value, funding is becoming more difficult to obtain. Therefore, it has become more important to increase the efficiency of operations and to thoroughly document

budgetary requests. Standards facilitate budget preparation, program review and justification, and management decisions by creating specific guidelines and goals for safety services. These guidelines and goals can be based on what are currently informal, but generally accepted, national norms. Formalizing those norms into standards would establish a valid measure of performance that could be used to set priorities for allocating funds.

Need for Standards. There is a growing perception among those involved in managing recreational beaches that the problems of liability, quality of service, lifeguard qualifications and training, and funding are common to most operations and that the methods to address such problems are similar in most instances. Therefore, to ensure that beach users in any part of the United States are provided adequate and uniform preventive and rescue services, it is proposed that national standards for these services at recreational open-water beaches be established and implemented.

Establishing Standards. Recreational open-water beaches may be divided into two broad categories on the basis of ownership and access. The first group consists of coastal beaches and beaches on other water bodies that are characterized by public ownership or public access rights. The responsibility for protection of the users of these beaches usually rests with the local, state or federal agency that manages the site. The second category includes limited-access, privately controlled beaches associated with organizations or facilities such as youth camps, resorts and other sites outside public ownership. In these cases, the owners or operators provide the protective and rescue services for their guests. Basic differences exist between the two categories according to the population served, the degree of control that may be exercised over

the activities at the beaches and the type of liability incurred.

Attempts to establish acceptable national standards for each of these two categories of beaches have been underway for some time. The American Camping Association has been developing standards for the operation of beaches and waterfronts associated with camps sponsored by its member organizations, such as the Girl Scouts of the U.S.A., YMCA, Boy Scouts of America, etc. Similarly, the United States Lifesaving Association, an organization of professional open-water lifeguards, has been working on standards and developing a textbook for public open-water beach management (3). Although these organizations have been pursuing their goals independently, certain problems are common to safety services in both categories and should be addressed by any national standards that are developed.

While those organizations are developing national standards, other organizations, agencies and insurance companies are probably creating standards for their own open-water programs on a local, regional or possibly a national level. To further these attempts to establish standards for open-water beach safety services, it was felt that it would be worthwhile to set forth some basic guidelines regarding the issues and practices that would have to be addressed. To this end, the "Conference to Develop Guidelines for Establishing Open-water Recreational Beach Standards" was held in Galveston, Texas, in April 1980. The meeting brought together persons from various local, regional, and national agencies and organizations to discuss and recommend basic elements that should be considered for incorporation in standards to be developed after the conference.

Conference Goals and Agenda. Each participant brought to the conference different expectations and viewpoints. All participants

shared the following overall goals concerning the use and management of open-water recreational beaches:

- (1) To enhance recreational opportunities at open-water beaches in the United States;
- (2) To prevent death or injury at these sites;
- (3) To improve the level and quality of preventive and rescue services available to the users of open-water beaches;
- (4) To encourage effective management and cost efficient operations;
- (5) To reduce the potential for claims and lawsuits stemming from accidents and management practices; and
- (6) To provide guidelines for the development of national standards for open-water recreational beaches.

The conference included workshops on the following topics:

Personnel and Training; Management and Supervision; Equipment and Facilities; and Aquatic Medicine. Participants were asked to attend particular workshops on the basis of their expertise and interest. The resulting mix of persons yielded a valuable range of opinions and experience for each topic.



Figure 1. Closely supervised aquatic recreation activities at Camp Kear-Sarge, Elkins, New Hampshire.

SESSIONS: RECOMMENDED GUIDELINES AND DISCUSSION

Personnel and Training

Protective and rescue services are only as good as the abilities of the personnel, the qualifications for hire and the on-the-job training received. Certain geographic regions and private organizations in the United States have a heritage of proud, dedicated and superior lifeguard services. Each year there is keen competition between well-qualified individuals for staff openings. Other public and private beaches, however, have less qualified personnel and inadequate management structures and modes of operation. Several attributes are desirable in lifeguards and in their training and management that are common to both public and limited-access beaches.

Certain guidelines for personnel qualifications and training were deemed universal to a professionally operated open-water recreational beach. These recommendations reflect the following position taken by the participants in the Workshop on Personnel and Training:

"Lifeguarding involves the active preservation of life, limb and property in, on and about the water. Lifeguards should not assume or be assigned tasks that conflict with these primary protective and rescue responsibilities." Although some of the following recommended guidelines are quite specific, conference participants agreed that definitive statements and recommended guidelines were preferable to innocuous, vague and/or open-ended declarations.

Guideline 1: Minimum Age of Lifeguard

The minimum age for persons employed as lifeguards at open-water recreational beaches should be 16 years.

Discussion. Lifeguards are hired to assume the responsibility for the protection and rescue of people from a potentially dangerous environment. They should be well trained, have a high level of skills, be willing to accept a significant amount of responsibility and, at times, risk their lives. Sixteen years old appears to be the minimum age at which individuals have the necessary maturity and judgment to assume such responsibilities. Usually, younger lifeguards are initially posted on the less demanding sites until they understand the physical and cultural parameters of the guarded areas. Age 16 may be too young in certain instances, such as public beaches near large cities that often have constant and sometimes violent social incidents. Age 16 may also be too young for beaches that have high energy regimes and at which there is a need for on-the-job training to recognize and understand the complex environmental processes that could endanger both the casual swimmer and the lifeguard.

Guideline 2: Physical Condition of the Lifeguard

The employer should require a statement from a physician that certifies that the lifeguard candidate has no medical disorder or physical impairment that would interfere with the full performance of the lifeguard's duties and that he or she meets the minimum requirements of the employer.

Discussion. The physician needs to know the fundamental physical requirements, the nature of the working environment and the job duties associated with employment as a lifeguard. Physical requirements might include heavy lifting (45 pounds or heavier); ability for simultaneous and rapid mental and muscular coordination; walking (___ hours); standing (___ hours); and the need for visual acuity and normal hearing. The work entails exposure to a variety of environmental factors that range from excessive dampness and chill to high temperatures and high levels of ultraviolet radiation. The lifeguard may experience frequent immersion in cold water and exposure to venomous marine organisms. The physician should be provided with a brief job description such as:

The lifeguards serve on a crowded public open-water beach; they conduct surf or other open-water rescues individually or as members of a team; they administer first aid and cardio-pulmonary resuscitation (CPR); very strenuous physical effort is sometimes required during emergencies both in the water and on the land; emotional and mental stability under stressful conditions are required.

Guideline 3: Qualifications Test

The test(s) of qualifications for employment should be rigorous enough to effectively select the best individuals for the lifeguard positions. The elements of such tests should reflect the local situation in terms of the environmental conditions, the nature of the recreational resources of the site and the population served (i.e., long distance swimmers and surfers as opposed to small children or the elderly).

Discussion. In general, a lifeguard should be able to swim 500 meters in 10 minutes or less. However, some tests may require the guards to carry a rescue buoy and run, then swim, and then run again to a finish line. Similarly, there may be a skill requirement with equipment such as a canoe, rowboat or rescueboard. Lifeguards should have passed an approved and nationally recognized standard first aid and personal safety course. In addition, they should have passed an approved and nationally recognized CPR test. Both certificates should be valid at the time of the test.

Guideline 4: Preseason Training Program

Each year a formal preseason training program should be held to orient new personnel and refresh returning (recurrent) personnel.

Discussion. Qualifying a person to lifeguard status is only the first step toward achieving a well-trained and competent waterfront specialist. A whole body of knowledge and skills must be learned regarding management philosophy; environmental conditions peculiar to specific waters and beaches; how to communicate with other lifeguards and with beach users; the preferred rescue techniques of the camp, organization or agency; first aid and emergency care procedures; how to complete and maintain reports on activities and rescues or aid incidents; and in-service training routines to upgrade skills and to master new skills and techniques. Most lifeguard positions are for only three months during the year, and it is probably safe to assume that most lifeguards do not have a career that exceeds five years in length. Therefore, it is deemed appropriate that there be preseason training annually for both new and recurrent personnel. A policy of annual preseason training will also serve to document the organization's



Figure 2. Competitive testing of potential lifeguards at Long Beach, California, includes a run-swim-run sequence.



Figure 3. Emergency Medical Service supervisor provides in-service training in resuscitation technique.

commitment to providing high quality and well-trained personnel for the protection of beach users should any questioning of such commitment arise as the result of claims or lawsuits.

These preseason programs will necessarily be specific to the organization and management of each particular beach or body of water. The following topics are offered as broad guidelines that would be applicable to all aquatic preventive and rescue services.

- (a) Lifeguard Orientation
 - goals and objectives of the organization;
 - chain of command;
 - public relations;
 - lifeguard conduct;
 - objectives of the lifeguard corps;
 - equipment and facilities and their use;
 - legal considerations.

- (b) Preventive Lifeguarding
 - causes of accidents, particularly site-specific causes;
 - recognition of local hazards;
 - elimination and control of hazards;
 - authority of lifeguard to protect users from hazards;
 - knowledge of applicable rules, regulations, and ordinances;

- (c) Environmental Conditions
 - weather and climate -- both regional and local; evacuation from water and beach in lightning and stormy conditions;
 - water conditions -- energy levels, currents, thermoclines, hypothermic conditions, entangling grasses or kelp;
 - topography -- particularly nearshore; dropoffs, snags, submerged hazards, potholes, scour pools;
 - aquatic life -- potentially hazardous organisms such as stingrays, swimming snakes, Portuguese Man-0-War;
 - other -- peculiar to the location, such as rapid rise of water level on a river below a dam, flash floods, abrupt changes of nearshore topography with high tidal range, seiche-like lake level variations.

- (d) Communications
 - basic systems -- hand and buoy signals between guards; whistle system; radio and/or telephone if applicable; flag system for informing users of water conditions; buddy systems at camps or with groups on a public beach; signs and other visuals;
 - emergency procedures -- contact with supervisory personnel; local Emergency Medical Service response;

- contact with, and transport to, local or regional emergency rooms;
 - public communications -- warnings; water conditions (temperature, energy, etc.); dangerous conditions; overcrowding; parking; lost children; courteous demeanor.
- (e) Rescue Techniques and Procedures
- victim detection -- body language, motions in the water; knowledge of potentially dangerous areas and activities; maintaining visual contact;
 - potential victims -- inappropriate clothing; obvious lack of familiarity with the environment and/or processes; alcohol/drug use; use of inflatables;
 - rescues with equipment -- use of rescue and assistance equipment from shore - life ring, etc; equipment on or above water - canoes, boats, rescueboards; equipment in water - swim fins, rescue buoys, SCUBA if applicable;
 - rescues without equipment -- holds and releases; swimming carries;
 - multiple rescues;
 - removal from the water -- single and multiple person carries; care of back and neck injuries;
 - specialized rescues -- helicopter; white water; piers; cliffs (if appropriate).
- (f) First Aid and Emergency Care
- CPR -- theory and techniques;
 - procedures for stabilizing injured and near-drowning victims;
 - procedures for care and transport of victims, particularly for spinal cord injuries;
 - diagnosis and treatment of hypothermia;
 - treatment of minor injuries -- stings, burns, abrasions, lacerations, etc.; particularly those most common to the geographic location.
- (g) Records and Reports
- lifeguards should understand the need for keeping accurate records and filling out reports with precision.
- (h) Testing and Evaluation
- during the training program, the testing of skills and techniques should be repeated as well as the testing of the theory and knowledge regarding the requirements of the job.



Figure 4. Rescue technique practice and victim carry to the beach during preseason training.



Figure 5. In-service physical conditioning. Start of a one-mile rough-water swim, with rescue tubes. Note inshore rescue boat.

Guideline 5: In-Service Training

Lifeguard services should schedule daily training to maintain both technical skills and physical fitness levels. Also, in-service training can include acquisition of new skills, equipment maintenance, review of organizational policies, applicable regulations, and other information that affects the lifeguards' performance of their duties.

Discussion. Lifeguards should participate in daily physical training exercises to maintain not only fitness, but also rapid reaction time. The training sessions should provide the opportunity for the guard to demonstrate his or her ability to meet minimum performance standards and to acquire new skills. In-service training can also provide the forum for identifying and training individuals who are both technically and mentally capable and who desire advancement into supervisory positions.

Guideline 6: Uniforms

Members of the lifeguard service should wear appropriate, high visibility uniforms that are quite distinct and easily recognizable by beach users. Generally, this would mean bathing suits of a solid, bright color with a distinctive patch and shirt. The uniforms should be practical, culturally appropriate and durable.

Guideline 7: Certification

The question of what certification an organization, municipality or other management entity should require for entry-rating lifeguards is not easily resolved. Therefore a specific guideline is not recommended. The issue is important, however, and is discussed below.

Discussion. No single certification in the United States satisfies all the varied problems, both real and perceived, of certifying open-water life-savers. Certain national organizations have well-established certification procedures and skill levels, such as the American Red Cross, YMCA, Boy Scouts of America, etc. Organizations that operate aquatic facilities will require their camps' beaches, lakes and other aquatic sites to be managed and guarded by those qualifying in their programs. There are great similarities in the skills, techniques and ability levels demanded by the above organizations' training programs, but combining these programs into one nationally recognized certificate does not appear imminent.

Also, some organizations that manage camps and limited-access beaches as well as public recreational beaches recognize these certificates of ability by stating that the lifeguard applicant must have "a _____ Lifesaving certificate or equivalent." Quite often it is recognized that the limited access beaches are somewhat similar to swimming pools in their management and lifeguarding requirements, that is, the swimmers are predominantly youngsters that sometimes need very close supervision in a restricted area. For instance, the thousands of summer camps in the United States that are managed under the standards of the American Camping Association have very stringent manning standards -- "there must be one guard for every ten or less persons in the water" (4, p.33).

On the other end of the requirement scale are those beaches that have extremely competitive and difficult qualification examinations and do not require formal certification from a national organization. These beaches tend to be those on the ocean near cities that characteristically have medium to high energy conditions, dangerous

currents and other hazards. These beaches usually have a lifeguard force made up of college-age people. A certification program is available for these open-water lifeguards that is conducted under the auspices of the United States Lifesaving Association. The program is held in the open ocean and covers the range of preventive, rescue, and management skills that apply to this type of lifeguarding.

It is doubtful that there will eventually be one single lifeguard certification applicable to all types of water bodies and management needs. However, as umbrella organizations such as the American Camping Association and the United States Lifesaving Association exchange ideas and recognize the best methodology for providing protective and rescue services, their guidelines and standards will undoubtedly become more similar.

The aquatic supervisor of an open-water beach that is not affiliated with a national lifesaving program should survey the certification programs that are available and choose the one that best suits the beach's needs. Lifeguards should then be certified in cooperation with that national organization.

Management and Supervision

One of the most important factors that determine the effectiveness of safety services at open-water recreational beaches is the nature of the management and supervision afforded the operations. Just as the basic functions of a preventive and rescue service should be carried out by highly qualified and trained lifeguards, the management and supervision of lifeguard programs must be conducted by persons with the administrative and functional skills, as well as the leadership qualities, that enable them to best provide for the safe use of the

beach and its waters.

Management policies vary depending upon the type of beach, the demographic makeup of the beach users and the kind of organization or agency that is responsible for providing the preventive and rescue services. The similar needs and problems experienced by most operations in the United States and Canada have led to the development of a body of generally accepted management practices. Some of these practices have been formalized through training programs, textbooks or certification programs, while others have been communicated informally through contacts between management and supervisory personnel from different beaches and regions.

The Workshop on Management and Supervision was composed of individuals representing a variety of organizations and geographical regions. While it was agreed that each organization must have its own criteria for its management and supervisory personnel, the participants also agreed that there was a definite need for some basic guidelines in terms of qualifications and performance. Certain management practices and operational procedures were discussed regarding methods of improving and maintaining the effectiveness of lifeguard operations. Also, guidelines were developed for the adoption and implementation of standards addressing issues of management and supervision. These guidelines reflect the philosophy that it is the responsibility of the managers of preventive and rescue services to provide for the safe use of open-water recreational beaches. In addition, they must operate efficiently and cost-effectively in a manner that is consistent with the budget while focusing on risk management.



Figure 6. Multi-use aquatic facilities at Four Winds-Westward Ho Camp, Deer Harbor, Washington.



Figure 7. Instruction by aquatic safety personnel at the Henry F. Koch Girl Scout Camp, Conneton, Indiana.

Guideline 1: Qualifications and Skills for Management Personnel

Candidates for management positions should meet the criteria established by the hiring agency. These criteria should require of the candidates the necessary knowledge, skills and experience for effective administration and management of the types of preventive and rescue services that the agency or organization provides.

Discussion. Management personnel must be capable of assuming the many and varied responsibilities associated with operating aquatic safety services. Some of the areas of knowledge, skills and types of experience that candidates might be expected to demonstrate would include:

- (a) Administration
 - planning and budgeting;
 - knowledge of local policies and procedures;
 - knowledge of applicable federal, state and local ordinances;
 - public relations;
 - personnel management and labor relations;
 - risk management;
 - awareness of the local political "system";
 - liaison with other local and regional emergency services.

- (b) Environmental Factors
 - environmental processes, including a basic knowledge of nearshore processes, meteorology and aquatic ecology;
 - local environmental regulations, especially those related to the use and development of beach environments.

- (c) Beach Safety and Lifeguarding Operations
 - preventive and rescue techniques under all conditions that may be encountered at an open-water recreational beach;
 - demonstrated competence or certification in advanced first aid and CPR;
 - staffing criteria and personnel deployment, methods of accountability and supervisory responsibilities;
 - communications systems;
 - reports and record-keeping;
 - operation and maintenance of equipment and facilities;
 - testing and training techniques for all job positions.

Guideline 2: Staffing Criteria

The number of posts or positions that will be staffed at a particular beach should be established on the basis of measurable criteria that consider factors such as visitation levels, the demography of the user population (age, race and sex), the energy levels and environmental processes characteristic of the site and the types of activities that take place on the beach and in the water. [For example, see (5) for an analysis and recommendations regarding a beach patrol operation.]

Discussion. It is difficult to establish strict standards for all categories of open-water recreational beaches with regard to staffing. Each type of beach has certain factors that affect the number of lifeguards that is required. Certainly, the staffing requirements for a still-water beach at a youth camp are different from those for a public beach on the ocean near a large city. Although staffing criteria vary from one beach to another, they all should be based on some quantifiable parameters that can provide a measure of the demand for services and financial support for both personnel and capital outlay.

The United States Lifesaving Association has developed a "Beach and Open-Water Survey Report" that may be used to determine staffing levels for public open-water recreational beaches. This survey instrument uses a point system to determine the relative danger of the beach and estimates the combinations of personnel and equipment that provide minimum coverage levels. For more information regarding this survey instrument, contact the United States Lifesaving Association.



Figure 8. Crowded day at Huntington Beach, California, which provides protective and rescue services during the day to beach users from the Los Angeles metropolitan area.



Figure 9. Use of inflatable toys can lead to life-threatening situations.

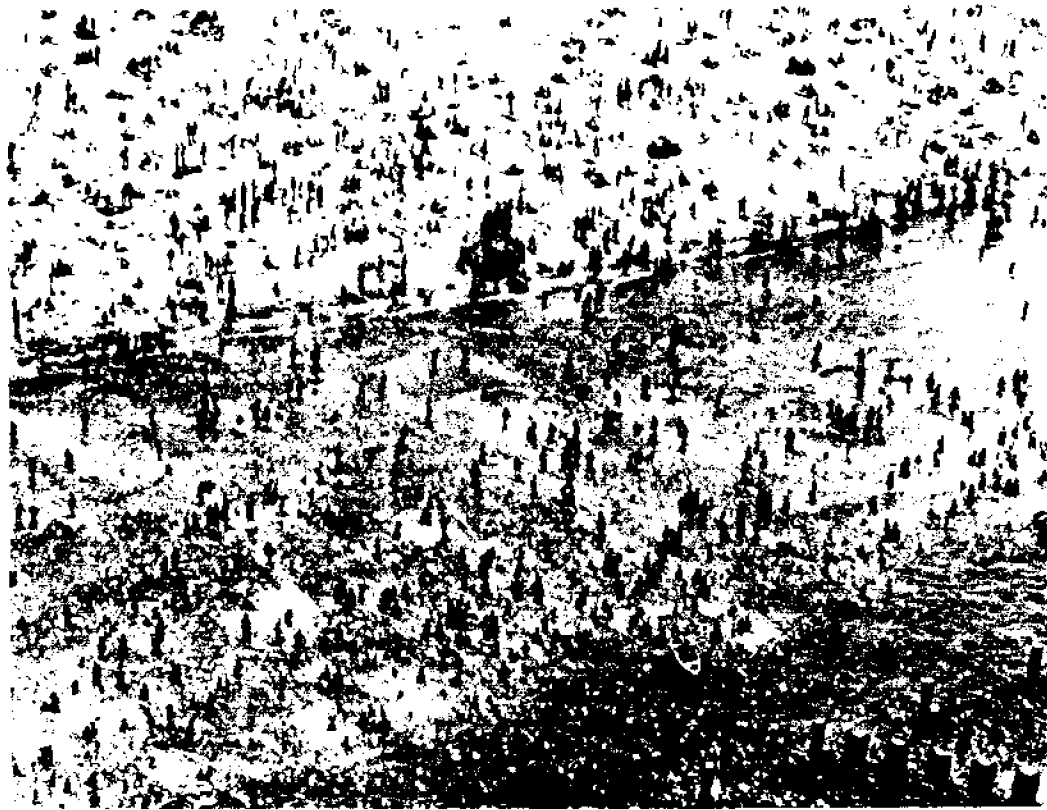


Figure 10. A well controlled and protected Chicago beach. Note the lifeguard tower at the shoreline and the three lifeguard rowboats.



Figure 11. Effective deployment of personnel during moderate wave energy and strong rip currents at Seal Beach, California. The tower normally has one guard -- this day five guards. The three on the deck are so certain that they will shortly be on another rescue that they have kept their rescue buoy strapped on and their swim fins in hand. The black ball flag means that no surfing is allowed.

Guideline 3: Labor Relations

Lifeguard operations should conform to federal, state and local laws and regulations concerning hiring practices, wages, labor contract negotiations, workman's compensation, insurance, affirmative action and other fair labor practices. The management should establish clear policies regarding hiring, duties, training requirements, salaries, promotions, time off, liability and workman's compensation insurance for its employees. A formal process of performance evaluation should be instituted as well as a grievance procedure for resolving individual labor disputes. Lifeguard agencies should be Affirmative Action/Equal Opportunity employers, but they should not sacrifice the quality of their services to accommodate personnel who are not qualified for the positions.

Discussion. Lifeguard services should be operated with a level of professionalism that extends to the subject of labor relations as well as other aspects of management. Obviously there will be a great deal of difference between the labor relations issues experienced by lifeguard services at a summer camp and those experienced by the year-round operations provided at large public beaches. The regulations concerning labor practices will vary depending on the type and size of the lifeguard operations. Management should provide a well-defined set of policies regarding the labor practices of the particular operation to prevent misunderstandings that could lead to deterioration of services or dissension within the ranks. Lifeguards perform an essential service, often under dangerous conditions, and they in turn should be given at least the same kinds of benefits and protection afforded employees in other organizations, both public and private.

The establishment of an annual performance evaluation system should

be considered. At evaluation time, the employees should be provided with a counseling interview with their supervisors regarding their evaluations. Employees should have a means to appeal what appears to them to be unwarranted or inaccurate evaluations. An example of an excellent evaluation document is that utilized by the County of Los Angeles (California) Department of Beaches (6).

Guideline 4: Inter-Institutional Relations

Administrators and managers of a lifeguard service should understand the political and institutional setting within which the service operates. They should be aware of the span of influence that other administrative entities may exert on lifeguard services and should develop formal and informal policies that govern interagency relations. Where applicable, working agreements should be developed between agencies to facilitate mutual aid in emergency situations.

Discussion. Both internal and external "politics" come into play in the administration and management of lifeguard operations. It may not be possible to establish guidelines for making political decisions, but the importance of this aspect of management demands that it be mentioned.

Lifeguard services do not operate independently. They often depend upon other organizations and agencies for funding, backup in certain emergencies and assistance in other areas of operation. Lifeguard services may also assist these organizations or agencies at various times.

The relationships between a lifeguard operation and other political or administrative entities should benefit both groups. It may be necessary to develop formal or informal policies to govern these

relationships. Often, formal working agreements result from the informal arrangements initiated through personal contacts between management personnel that have a mutual concern for the safety of beach users.

For example, a cooperative relationship could very effectively be developed between the lifeguard service or private camp and the local emergency medical services (EMS). There is a vital need for the very careful establishment of guidelines, priorities and responsibilities between the water and the hospital emergency room. In particular, there is a need for a unified rescue/trauma treatment system that is coordinated and non-repetitive, rather than the rescue/first aid activity which most lifesaving services provide. Relevant agreements that can and should be made between institutions include training of lifeguard personnel in meeting EMS or emergency room needs before victim transfer; assistance of EMS personnel by lifeguards; crowd control; loading of victims aboard vehicles; and possibly assisting during transport.

Guideline 5: Fiscal and Risk Management

Management personnel should follow accepted procedures for developing and implementing agency budgets. Budget review and evaluation should be carried out annually to assure a cost effective operation. Risk management alternatives should be studied to determine which program offers the greatest amount of protection at the least possible cost.

Discussion. As mentioned in the introduction, some of the most significant management problems of lifeguard operations at recreational open-water beaches are fiscal and risk management issues. The trend appears to be one of diminishing financial resources to support an increasing demand for services. Further aggravating the situation is the growing expense associated with risk management, including the cost of liability insurance, legal fees and diverted manpower.

To maintain even the minimum level of protective services, management must scrutinize the agency's operating and capital purchase budgets. In these times of taxpayer revolt, "trimming the fat" is no longer an appropriate metaphor for budget review; a more suitable expression might be "slicing off the lean." To avoid slicing off more than is needed to provide adequate services, it is important to carefully document each budget item and to periodically evaluate the effectiveness of the operation. The importance of keeping accurate records of agency activities will be discussed in more detail later, but it cannot be stressed enough. Budget justification is made much easier by having reliable statistics on services rendered, the user population and other information that will educate and influence funding agencies. Statistics may also be used to identify areas where the budget may be cut to save more effective elements of the operation. Conversely, statistics may reveal an area that requires expenditures in excess of the current budget.

The methods of handling risks associated with the provision of lifeguard services may vary from location to location depending on the type of agency that sponsors the operations, local and state laws concerning the liability of such agencies, the inclination of the population served to sue and the insurance options available to the



Figure 12. In-service training familiarizes lifeguards with Emergency Medical Service equipment and procedures.



Figure 13. A near-drowning victim was saved through coordinated treatment by the Emergency Medical Service and lifeguards on a rock groin before he was taken to the emergency room. The victim's wife said that he had drunk one pint of whiskey, a couple of gulps of gin and eight beers. Note the long pants that the victim was wearing.



Figure 14. Lifeguard resuscitation of a near-drowning victim in Galveston, Texas. The victim showed no vital signs when he was brought to shore.



Figure 15. The Emergency Medical Service took over the treatment of the same victim. He said that he had drunk at least six beers. Later arrested as an illegal alien, he refused further treatment or transport to the hospital. Note portable radios carried by the lifeguards.

agency. Most lifeguard operations try to reduce risks through identifying and eliminating hazards -- primarily prevention activities. However, because accidents and injuries are inevitable and will sometimes result in claims against the agency or organization providing the lifeguard services, the transfer of risk by insurance policy or the retention of risk, also known as self-insurance, pose additional operating costs for lifeguard operations. Administrators should investigate the various risk management options available to them and choose the program best suited to their situation in terms of coverage and costs.

Guideline 6: Operational Policies and Procedures

Lifeguard operations at open-water recreational beaches should establish reasonable goals for providing protective and rescue services. To achieve these goals management should develop and implement policies and procedures for regular operations and for any special circumstances, such as hurricanes, floods, etc. The goals, policies and procedures should be clearly stated in the form of an operations manual that should be required reading for all lifeguard personnel. [See (7) for example]

Discussion. It is reasonable to expect that preventive and rescue services cannot be all things to all people. Although a lifeguard's primary responsibility is to protect and rescue the beach users while they engage in aquatic activities, they may be called upon to perform other actions including law enforcement, maintenance and other tasks during natural disasters or other emergencies. A system of priorities should govern the activities of a lifeguard in response to these various demands on their attention. It is vital, therefore, that lifeguard agencies establish realistic goals for their personnel that will assist

in allocating available resources for the various demands. Goals will also assist in program evaluation by providing measurable criteria for assessing the effectiveness of various policies and procedures that govern the overall, as well as the day-to-day, operational efficiency.

Operational goals are achieved by adhering to established policies and procedures that govern the functional aspects of a lifeguard service. Policies state what must or may be done to achieve a certain operational goal; procedures describe how to do it. Areas amenable to operational policies and procedures include:

- preventive measures and rescue techniques;
- communications and back-up;
- first aid and emergency medical care;
- personnel deployment;
- pre-season and in-service training;
- reports and record-keeping;
- public relations;
- law enforcement;
- operation and maintenance of equipment and facilities;
- accountability, chain of command, etc.;
- interagency cooperation;
- natural disasters and other emergencies.

Guideline 7: Reports and Record-Keeping

Lifeguard services should design and implement a system of obtaining, storing and retrieving information on services rendered, special incidents, population served and other aspects of operations.

Discussion. Reports and record-keeping are essential to the management of lifeguard services. The time spent in collecting the information and filling out the forms is well spent when one looks at the benefits that may accrue. Statistics on services rendered demonstrate precisely the kinds and levels of activities that the lifeguards are called upon to perform. These records will facilitate planning, document budget requests, and provide a method of recall for

testimony if litigation arises from actions performed by lifeguards.

The kinds of activities that should be reported and the categories of information that should be recorded depend upon the type of lifeguard service (i.e., public or private), the nature of the incident and the anticipated uses of the information.

Some of the commonly kept statistics include preventive actions, including warnings; rescues; medical aids; resuscitations; ambulance cases; drownings, for both guarded and unguarded areas; lost persons assisted; beach attendance; disturbances or riots; and locally important activities such as assists to boaters, value of boats saved or assisted, cliff rescues and the number of times law enforcement personnel were required. The amount of detail recorded for each type of report may vary from just a count of the beach attendance, to simply taking the person's age, race, sex, and place of residence for rescues and medical aids, to filing very detailed reports for drownings, near-drownings, and other major emergencies. The United States Lifesaving Association (USLA) has developed a reporting form for drowning and near-drowning incidents and an annual statistical summary form for reporting various categories of services rendered. These forms will provide a method of collecting similar categories of information from each beach for compilation and analysis. The data derived from this program will be used for research into the cause and prevention of injuries and fatalities at public open-water recreational beaches.

Guideline 8: Prevention and Education

Management personnel should promote water safety education and other programs aimed at preventing accidents or injuries in aquatic environments. Activities that create awareness of safety practices at

open-water beaches should be encouraged at the local, regional and national levels.

Discussion. Prevention is the most cost-effective method of ensuring the safety of open-water recreational beach users. To this end, it is the responsibility of management personnel to promote activities that are designed to equip the beach users with at least a basic knowledge of how to avoid accidents and injuries while enjoying open-water beaches. Lifeguard services may initiate their own programs in preventive education or they may collaborate with other local, regional, or national organizations in jointly sponsored activities. Ways to carry the safety message to the public might include presentations or programs before school and civic groups, public information announcements via the media, designation by local governments of "Beach Safety Weeks," informational materials that can be distributed to beach visitors, static informational displays adjacent to the beach and warning signs and other visuals.

Guideline 9: Management Training

Agencies or organizations responsible for lifeguard services should provide the opportunity for administrative personnel to participate in management training programs, seminars, and other activities that will ensure their continuing education in effective management practices. Participation in professional organizations should be encouraged to promote the exchange of management and operational concepts, policies, and procedures among supervisory personnel from different agencies, organizations and geographic regions.

Discussion. The management of a lifeguard operation requires skills in many and various areas. To maintain an effective program management personnel must be kept aware of current practices and developments in a number of fields. Just as lifeguards are expected to undergo periodic training and review, management personnel should be encouraged to keep abreast of current management practices, equipment and communications advances, and changing medical techniques, practices and certifications

Equipment and Facilities

Lifeguards are still the primary unit in the operation of protective and rescue services, but their effectiveness is significantly increased by the use of certain types of equipment and facilities. These devices are designed to assist the lifeguard in surveillance, rescues and emergency medical care, thereby allowing fewer guards to provide better services to beach users.

In the United States there is considerable variation in the kinds of equipment assemblages and operating facilities used by lifeguard services. Often the kinds of equipment and type of facilities are characteristic of a region and are based on tradition or historical precedence. As examples, on the Northeast Coast of the United States rowing dories are used to patrol just beyond the surf line. On the West Coast, high powered speedboats may be used for the same purpose. At many limited-access camps, lifeguards monitor the swimming area in canoes or rowboats.

Although methods and facilities may vary, the basic premise remains that the lifeguards must be provided with the necessary equipment to respond most efficiently and effectively to an emergency and to observe and provide warnings or other preventive measures to beach users.

Similarly, the backup system to the lifeguard must be efficient and adequate to meet the problems that may arise during the hours of operation.

The Workshop on Equipment and Facilities was composed of individuals from a number of different organizations and agencies that represented the spectrum of lifeguard services -- from large public beaches to small private camps. Because of the diversity of needs within this spectrum, the guidelines developed by this group are quite broad and address the various situations that may be encountered by these different lifeguard services.

Lifeguard services must operate within rigid, sometimes severe, fiscal constraints. It is important to consider budgetary limitations when discussing the guidelines for equipment and facilities. While it is possible to provide effective lifeguard services with only the most basic equipment and facilities, it is sometimes difficult to decide the best way to spend scarce dollars for capital expenditures. Therefore, managers of lifeguard agencies should critically survey their operations, and detail where effectiveness might be improved by the use of certain types of equipment or facilities, and where it might be improved by other means. From this survey, a list of priorities for capital expenditures should be made and updated annually. Purchase of equipment and facilities should conform to these priorities. The following guidelines, which assist in the development of standards, may also help in determining priorities for capital expenditures for equipment and facilities for a particular beach or agency.

Guideline 1: Surveillance

The management of protective and rescue services at open-water recreational beaches should distinguish between those areas that will receive lifeguard protection and those areas that will not be guarded. Areas that are guarded should also have the hours of operation posted. The area of beach or waterfront for which each lifeguard is responsible should be made clear so that the lifeguards, management and beach users understand exactly which areas are guarded. Lifeguard towers and other facilities should provide uninterrupted visual surveillance of the guarded area and allow a minimum response time to an incident within the lifeguard's area of responsibility.

Discussion. Because of budgetary restrictions, many lifeguard services cannot provide adequate protection to the entire beach within their jurisdiction. Therefore, to ensure adequate protection in at least some areas rather than an inadequate level of protection throughout the entire area, the primary decision to be made by management before establishing guard posts is which areas will be denoted as "guarded" and which will be "unguarded." A guarded beach or swimming area is one at which a trained lifeguard is stationed during prescribed times. If necessary, the guard will be relieved for breaks and meals so that continuous surveillance is maintained. A lifeguard or lifeguard vehicle that periodically visits or checks a beach area should not be considered as providing a guarded beach by either the management or the population served. The beach users should be made aware of the location of the guarded and unguarded sites so that they may make an informed choice as to where to swim. Because of the problems of liability, the posting of areas should be undertaken with a great deal of caution in how the signs are worded. It may be best to consult with

the legal counsel of the sponsoring organization or agency to determine the proper language. Where the beach population includes many children who cannot read, or if there is a significant use of the beach by people who speak foreign languages, international symbols or multilingual signs might be used.

Surveillance can be divided into two main categories -- "basic" and "elevated." Basic surveillance of the immediate guarded area can be provided from foot patrol sites such as along the shore, piers, groins, jetties, floating structures, or other places on the ground or near the water level that provide relatively unobstructed vision and effective response. Lifeguards at these types of sites usually carry only their rescue buoys or tubes and do not have immediate access to first aid equipment and supplies.

Elevated surveillance is usually considered to be either "primary" or "secondary" in nature and responsibility. "Primary" elevated surveillance is used when the scope of responsibility increases beyond the basic level. An elevated guard post is required when the lifeguard is responsible for a larger area and more people and/or when conditions of the environment, such as heavy surf or rip currents, demand closer surveillance. These conditions dictate a wider field of vision than would be possible at ground or water level. Elevated lifeguard towers are constructed from a variety of materials, including metal, wood, fiberglass, and a combination of these materials. Common to all of them are the following features:

- access -- safe and easy exit to effect a rescue;
- observation -- a minimum of 180 degrees of unobstructed field of vision;
- eye contact -- must be maintained with a victim during exit from the structure;
- height -- high enough to permit observation of the

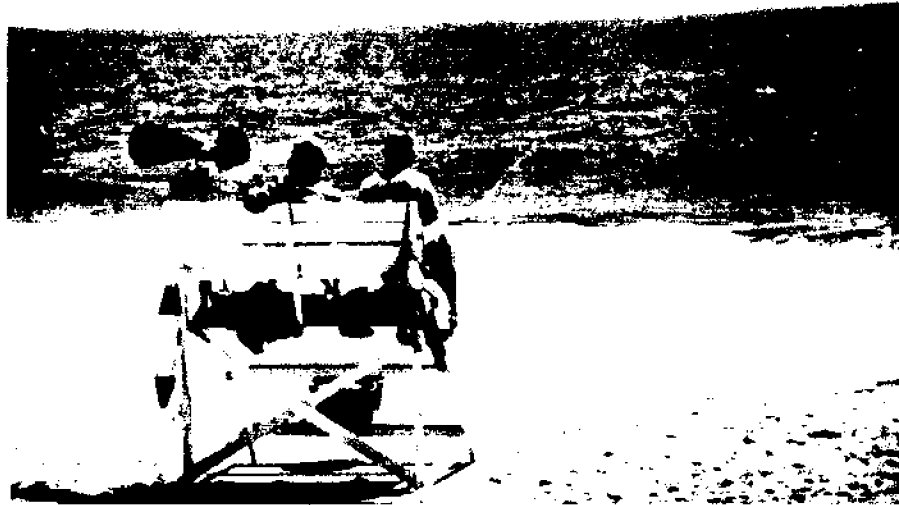


Figure 16. Class I multiguard tower at Asbury Park, New Jersey. This type of tower is common on beaches in the Northeast. Note the ropes and buoys delineating the guarded area.



Figure 17. Class I lifeguard tower, North Padre Island, Texas. Unfortunately, the lifeguard seems to be paying more attention to the girl than to his area of responsibility.



Figure 18. Class II tower at Huntington Beach, California. Note the rescue buoy hanging from the roof. When guards at adjacent towers notice that the buoy is missing they extend their visual coverage to that tower.



Figure 19. Class II tower at Newport Beach, California. The woman in the passenger seat of the vehicle is the tower guard taking a break.

- water and beach area of responsibility given the local topography and beach structures;
- protection -- from the elements (i.e., wind and sun), if frequent relief is not available; usually an umbrella will suffice;
 - seating -- adequate for the duration of the work day and which will not detract from the surveillance;
 - construction -- the tower should be of sound and stable construction that is fairly resistant to vandalism, with a minimum amount of hardware that may rust and deteriorate, and the structure should need only periodic maintenance.

A Class I tower is open, usually with an access ladder, sometimes covered with an umbrella, and fairly mobile, that is, it can be transported or towed by truck if needed elsewhere. A Class II tower is enclosed, with a non-glare field of vision of the water and beach. It should be well-ventilated, provide adequate storage space for rescue and first aid equipment, have a ramp or ladder and be able to be towed on skids behind a truck.

A "secondary" elevated tower is used for observation and management. Its occupants are responsible for a general overview and for backup coverage of a lifeguard's area of responsibility when that guard is out of the tower effecting a rescue. The secondary elevated tower is sometimes referred to as a "control tower" or "zero base." These towers should be enclosed to provide protection from the elements, well-ventilated, and high enough to permit observation of both the water and beach for a considerable distance. If it is part of the main lifeguard station or headquarters, it should be located on the top level of the building. The tower should provide a view that is unobstructed for at least 180 degrees, a non-glare field of vision, easy access and adequate seating and observational stations. Personnel who man secondary elevated towers are usually responsible for several of the basic towers and foot patrol guards. Therefore, many towers have

binoculars for one or more guards, and most have spotting scopes for making observations at greater distances. Control towers, or zero base, often have highly amplified loud speakers that can rotate 360 degrees to provide warnings, to announce lost children or to alert the primary tower and foot guards to potentially dangerous situations that they cannot see from their low angle of sight.

Guideline 2: Communications

Lifeguards should be equipped to communicate with each other, with the lifeguard headquarters or the central dispatcher, with outside emergency services and with the beach users.

Discussion. Communications are essential to all lifeguard operations. A communications system should provide:

- lifeguard personnel with the ability to communicate with each other in an expedient and efficient manner;
- operational supervision with the ability to coordinate all emergency activities within the scope of the service and with outside agencies such as the local Coast Guard, police and fire departments, and other emergency services;
- a means of addressing the beach users in order to warn them of potentially dangerous situations and to advise them of rules and regulations.

Communication systems may range from simple hand or whistle signals between lifeguards to radio or telephone networks that link each lifeguard with a central dispatcher who also has access to outside agencies. In all cases, the system of communications must be easy to use, reliable and expedient. To facilitate rapid communications, short codes or signals may be used to convey certain messages. These codes or signals should be simple, clear and consistent. Procedures for using the communication systems should be set forth in the departmental

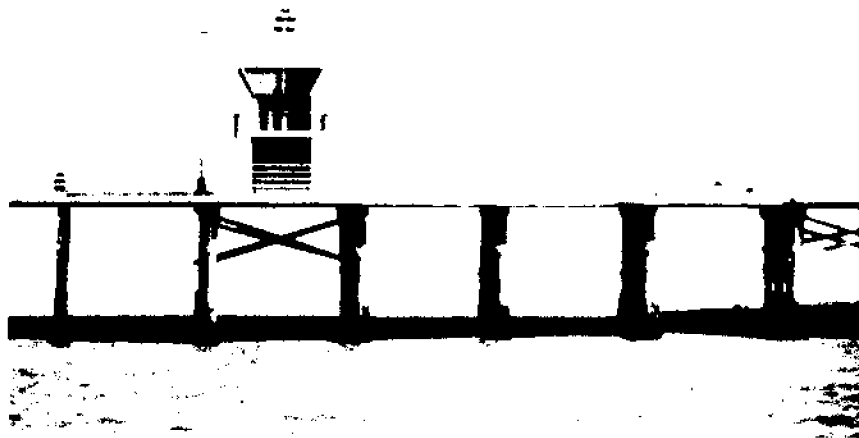


Figure 20. "Zero Base," Seal Beach, California. Note the rotating loudspeakers on the roof for announcements and warnings.



Figure 21. Secondary tower at Long Beach, California.

operations manual and should be reviewed periodically by all lifeguard personnel.

Some of the important characteristics of the various communications systems are as follows:

- (a) Hand/Buoy/Whistle Signals
 - used for communications between lifeguards, especially when they are in the process of effecting a rescue;
 - used to signal for backup, direct a rescue boat or to give warning;
 - each signal must be easily recognized and simple to perform.

- (b) Telephone Systems
 - used in larger operations to communicate between towers and between towers and headquarters;
 - each tower should have a unique number or designation to be used when calling to or from that tower;
 - messages should be concise and clear;
 - a dispatcher should be in charge of monitoring and routing communications through the headquarters, logging all calls, and contacting outside agencies whenever necessary.

- (c) Radio Systems
 - necessary where telephone systems are impossible or impractical;
 - especially useful for communicating with rescue and emergency medical vehicles;
 - all federal rules and regulations governing radio communications must be observed;
 - standard radio codes (i.e., "10" codes, etc.) should be used to facilitate communications;
 - a dispatcher should monitor and log all radio communications.

Guideline 3: Rescue Vehicles and Vessels

The choice of appropriate vehicles and/or vessels to be used by a lifeguard operation should reflect local needs and conditions. Vehicles should be able to operate safely and reliably on the beach, even in adverse driving conditions, such as loose sand and uneven terrain. Vessels should be safe, seaworthy and efficient. They should be

suitable for nearshore use, often in adverse conditions. If engine-powered, they should be designed to minimize the danger of injury to the vessel operator and to persons in the water near the craft. Vehicles and vessels should be operated only by trained personnel and should be serviced regularly.

Discussion. Rescue vehicles and vessels enable the rapid deployment of additional personnel and equipment to back up and assist the lifeguard who makes the initial contact with the victim. Mobile units also patrol areas that are difficult to guard or where there are no regular lifeguard posts, thereby providing the primary response in some areas. Because of their capabilities and emergency first aid equipment, these units may sometimes be called upon to respond to incidents outside of the normal area of responsibility of lifeguard operations.

The need for rescue vehicles and vessels is determined by the type of open-water recreational beach and the nature of the lifeguard services provided at the site. Small private beaches with low energy conditions and limited impaction have different needs from a large public beach near a city. Camps, resorts and other organizations that provide services within a fairly small area may not need a specialized rescue vehicle or vessel. They may have a vehicle on standby at all times to transport accident victims to emergency care facilities. For lifeguard operations in which each lifeguard is responsible for a large area of beach, often with hundreds or thousands of persons, one or more mobile back-up units are almost a necessity. For example, when a guard enters the water on a rescue, another guard should be transported to the post to provide coverage to the area, to assist the guard in the water, or to transport the victim for emergency medical care.



Figure 22. Four-wheel-drive vehicle with rescue board and basket. Note easy access to the swim fins.



Figure 23. Mobile backup vehicle, Galveston, Texas. Equipment includes SCUBA gear and inflatable boat for inshore rescues.

Lifeguard operations should select their types and numbers of vehicles and vessels carefully because their cost may represent a major portion of their capital budget. Some of the things to consider when selecting a vehicle or vessel are as follows:

(a) Vehicles

- normal driving surface -- loose vs. hard-packed sand, shell, rock, pavement, etc.;
- coastal topography -- open beaches vs. cliffed coast;
- climate -- temperature, wind, precipitation;
- vehicle usage -- patrol vs. response/back-up only, alternative uses (i.e., off-season uses).

(b) Vessels

- type of beach -- ocean vs. inland waters, public vs. private, open beach vs. designated swimming areas;
- nearshore conditions -- bottom configuration and composition, aquatic vegetation (i.e., kelp), energy levels (waves and currents);
- vessel use -- supervision and rescue of swimmers vs. patrol of boating areas, marinas, etc.

(c) Vehicles and Vessels

- reliability -- amount of time unit may be expected to be out of service;
- equipment needs -- types and sizes of equipment to be carried in unit;
- operational costs -- fuel efficiency, maintenance expenses.

Many lifeguard operations at larger open-water beaches prefer four-wheel drive vehicles because they provide reliable traction and ruggedness. Some operations alter the body and accessories of standard vehicles to suit their particular needs (i.e., substituting fiberglass bodies for metal, adding racks for equipment storage, and attaching public address systems and other emergency warning devices.

The choice of a rescue vessel varies perhaps even more widely than that of the vehicles. A particular type of vessel may be characteristic of a region of the country, its use established by historical precedent. There may even be regional variations in the design of a similar class of vessels. The rowing dory, for instance, is often modified to suit

the needs or preferences of lifeguards in a particular part of the country. Lifeguard services at camps or other facilities with still-water beaches often use the vessels that they are most familiar with -- canoes or rowboats.

The emergence of the concept of "perimeter defense/mobile back-up" lifeguarding techniques created the need for larger, faster vessels to provide from-the-water assistance to lifeguards effecting rescues. This led to the use of motorized surf rescue boats, especially along the large public beaches of southern California. These vessels vary somewhat in design and means of propulsion, and range from twin-screw inboards to jet boats. They can operate within or close to the surf zone, and they can cover appreciable distance by travelling beyond the surf at high speed parallel to the beach.

Another class of surf rescue boat that was pioneered in Australia and New Zealand has recently been introduced for use in this country. The IRB (inshore rescue boat) or IRV (inshore rescue vessel) is an inflatable craft powered by an outboard motor. It is extremely maneuverable and performs efficiently in surf that has large, breaking waves. It can be carried on or behind a rescue vehicle and can be launched very quickly from the beach for rescues in the surf zone.

Guideline 4: Personal Equipment

Each on-duty lifeguard should be provided with equipment designed to increase his or her effectiveness in prevention, rescue, and medical treatment. Personal equipment also should be provided to protect lifeguards from injury while performing their responsibilities (e.g., sunglasses to prevent eye injury from glare).

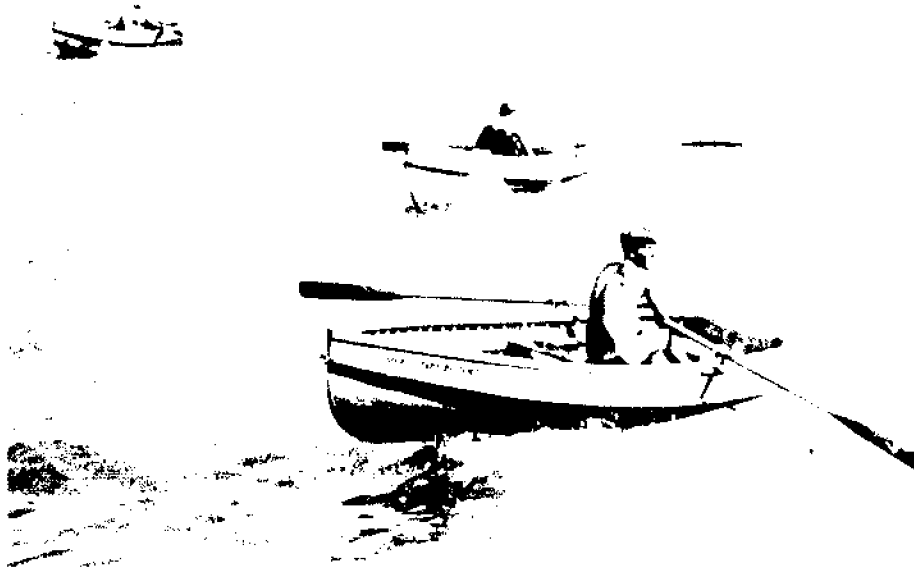


Figure 24. At Chicago lifeguard school, lifeguards train in rowboats.



Figure 25. High-speed rescue boats. Note the cut-out transom in stern for ease in bringing victims aboard.



Figure 26. Vessel is equipped with a towing bit for helping small boats in distress. Also note the readily accessible rescue buoy and swim fins.



Figure 27. Inflatable with rigid fiberglass hull, for inshore rescues.

Discussion. Proper equipment can significantly increase the protection that a lifeguard can provide. The equipment that is discussed below will assist the lifeguard in prevention of accidents, in treatment of injury and in rescues. Communication devices have been discussed in Guideline 2 of this section and are not described again here.

A lifeguard who is not under stress from environmental conditions such as excessive sun, wind, glare, etc., is more attentive, more confident, and therefore more effective. Such stresses can be reduced with towers, clothing and other devices that do not interfere with the guard's performance of his or her duties. This may mean construction of enclosed or partly enclosed towers in cool or windy climates; issuing jackets, hats, visors or other appropriate uniform items; or providing sunscreen lotion to prevent excessive exposure to harmful ultraviolet radiation.

Because prevention is the most effective way to protect beach users, each lifeguard or lifeguard post should be able to notify beach users of water conditions or hazardous activities. In many cases, this information may be posted on signs attached to the towers or communicated by flags or other signals. Whistles, bullhorns, etc., may be used to warn people engaging in hazardous activities in the lifeguard's immediate area.

Various items of equipment may be used to help the lifeguard in rescues. Swim fins and rescue boards increase the speed with which the lifeguard reaches the victim. Fins, donned by the lifeguard on entering the water, are especially helpful in rescues that require swimming long distances, that must be made in moderate to high energy conditions, or in which the victim is caught in a rip current. Rescue boards, or paddleboards, are useful for long distance rescues, reaching victims

quickly or rescuing more than one victim, but they are not suitable for use inside the surf zone in high energy conditions.

Perhaps the most important personal equipment for any lifeguard performing swimming rescues is the rescue buoy/can/tube. These items consist of a tubular flotation device attached to a length of rope with a webbed loop at the far end. One of these items is towed by the lifeguard to the victim, then used to support and float the victim as he or she is pulled to shore. The rescue buoy/can/tube is carried by the lifeguard at all times. Usually a bright red or orange color, the rescue buoy/can/tube is easily seen by lifeguards working adjacent posts to spot whether the other guard is on station, in the water on a rescue or walking among the beach crowd. The brightly colored buoy/can/tube is also an excellent signaling device between lifeguards when they are away from their traditional communication system. It also lets the beach user identify a lifeguard on foot patrol.

Because of frequent requests for minor first aid treatment, at least the basic first aid supplies should be provided. If medical back-up personnel and equipment are not available, lifeguards may need to have mechanical resuscitators at hand. In all cases, access to more extensive treatment equipment and supplies should be available, either in the mobile back-up or at the lifeguard headquarters. Lifeguards should be provided with appropriate forms to record their daily activities. Each report should include the name, age, race, sex and address of anyone they assist, rescue, or treat for injury.



Figure 28. This sign is very clear, unless the reader does not read English.



Figure 29. Beach for the handicapped at Sea Isle City, New Jersey. This idea deserves much broader application.



Figure 30. Well-equipped lifeguard jumps from a pier to rescue a victim caught in the rip current. Note the flow pattern of the rip current outlined in foam flowing seaward beside and under the pier.

Guideline 5: Operations and Management Facilities

Facilities associated with lifeguard agencies should provide enough office, storage and work space for the efficient management and operation of protective and rescue services. Facility design must take into account the size of the lifeguard operation, its scope of responsibility, the expected volume of activity and the availability of funds for construction and maintenance.

Discussion. Operations and management facilities for lifeguard services at open-water recreational beaches range from very modest to quite extensive. A small operation, such as that at a limited-access camp may have only a storage room for equipment and a place to hang the duty roster. The headquarters of an operation at a highly impacted coastal location near a large city may contain administrative offices, a central operations and communications room, first aid facilities, locker rooms and showers, storage space and a workshop. The largest operations may have buildings in outlying areas that include some of the same facilities as the headquarters.

Given these disparities, it is difficult to establish a standard regarding operations and management facilities. However, a number of points regarding this topic should be addressed. The following general features should be considered when formulating standards for facilities.

(a) General Considerations

- (1) Location -- The main lifeguard facilities should be adjacent to the beach, yet separate from public restrooms and concessions to avoid interference with emergency operations. The location should be easily accessible to the beachfront and to nearby roads. The buildings should be located well enough inland to avoid flooding by storm tides or surf. Response time to all portions of the beach should be minimized through a centralized location.

- (2) Visibility -- The lifeguard facilities should be clearly distinguishable from nearby structures so as to provide it with an easily identifiable appearance, the buildings should be clearly marked as lifeguard facilities.
- (3) Aesthetics and construction -- Lifeguard facilities, because of their location on or adjacent to the beach, should be designed so as to present an aesthetically pleasing appearance. In areas where building codes or zoning ordinances regulate the construction of structures along the coast, the facilities should conform to all applicable rules and regulations.
- (4) Security -- Facilities should be designed and constructed to discourage vandalism and theft. Outside lighting may be used to provide extra security.
- (5) Energy conservation -- All new facilities should consider the incorporation of various energy saving devices or design features, including active and passive solar systems for heat or hot water. Insulation should be used to reduce energy consumption where possible. Energy efficient equipment should be considered when making capital equipment purchases.

(b) Potential Facilities and Design Elements

(1) Primary Facilities

- (a) Administrative offices
 - adjacent to operations, yet separate from busy activity areas;
 - room for records storage, desks, etc.
- (b) Communications/operations room
 - adjacent to the beach;
 - access to beach for vehicles;
 - space for telephone switchboard or radio console;
 - designed for visual surveillance.
- (c) First aid room
 - adjacent to beach;
 - access to facility for both ambulatory and stretcher cases -- i.e., ramps, access road for emergency vehicles;
 - communications -- direct to outside emergency medical services;
 - equipment and supplies -- sufficient first aid

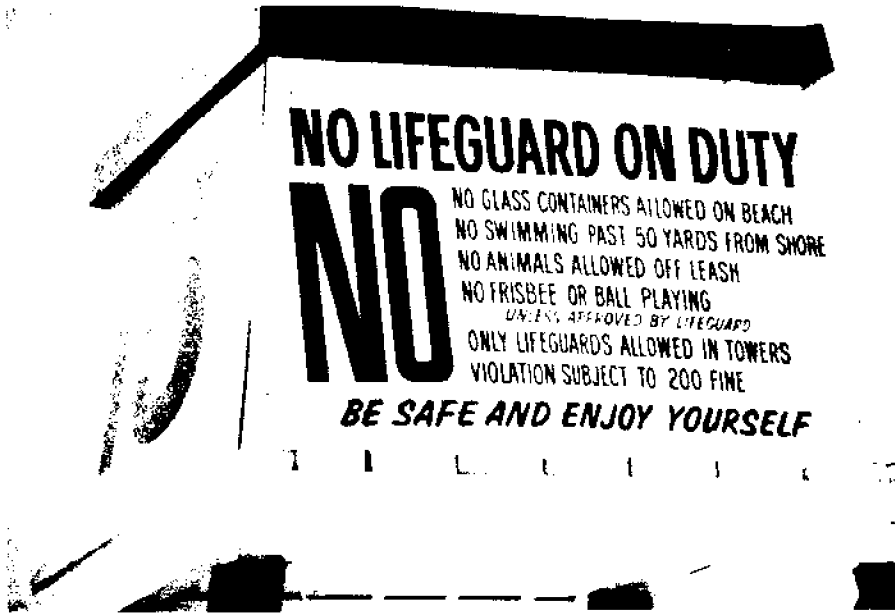


Figure 31. List of beach ordinances to inform and protect the public.



Figure 32. Mobile lifeguard headquarters in Galveston, Texas. The area is prone to hurricanes and county-wide flooding, during which the headquarters can be towed by a four-wheel-drive vehicle and used as an emergency command post.

- supplies, resuscitators (if trained personnel are available to operate them), running water (hot water if available), counter with sinks, footbath, chairs, backboard/stretchers, bunk or cot;
- storage -- adequate for equipment and supplies;
- environment -- climate and lighting controlled for comfort and safety.

(2) Auxiliary Facilities

- (a) Reception area
 - access for public;
 - room for educational displays, information, etc.;
 - waiting area for lost children.
- (b) Lockers and restrooms
 - for employee health and comfort, separate from public use;
 - lockers, showers, toilets, etc.
- (c) General purpose room
 - furnished for training sessions, meetings, lifeguard's lunchroom, etc.
- (d) Vehicle and equipment storage/repair facility
 - access to beach and outside roads;
 - tools and supplies for repair and maintenance;
 - locked storage compartments.

CONCLUSION

This document has presented guidelines for use by organizations that are developing safety standards for open-water recreational beaches. Some organizations, most notably the American Camping Association, are already setting such standards. It is hoped that other organizations will consult this document when preparing theirs. Even if they do not follow these guidelines when formulating standards, they should, by studying this report, at least gain a better understanding of some of the most important issues involved.

These guidelines are not exhaustive in their coverage of issues and accepted practices. The provision of safety services at open-water beaches is a field in which a great deal of change may be expected and additional guidelines may be necessary to address new problems. Hopefully, this conference and the resulting guidelines will have at least provided a catalyst for improving the management and safety of our nation's open-water recreational beaches through the development of standards by the various organizations.

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Figure

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