

# Comparative Study on the Security Personnel Training for High-risk Sports in America and China

With swimming pool lifeguard training as an example

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**Abstract**—In order to enhance the quality of security personnel training for high-risk sports, this paper, with the swimming pool lifeguard training as an example, has made a comparison between American and Chinese lifeguard training contents, the research conclusion of which indicates that: (1) Both America and China specify the lifeguard's position in a swimming site for business operation by law, but with different regulation modes; (2) China adopts the authority unifying organization and appraisal upon the lifeguard training and the authority supervising its implementation, however, the lifeguard training in America is organized and implemented by non-government institutions while its reasonable operation is guaranteed by industry self-discipline as well as laws and regulations; (3) In lifeguard training, America pays more attention to the lifesaving details and has applied modern lifesaving equipments during training process with first-aid skill required to reach the rescue standard of Red Cross, however, China attaches more importance to the operability of examination practice and the test content is closely related to the training content.

**Keywords**—lifeguard; training; swimming

## I. INTRODUCTION

On May 1, 2013, the General Administration of Sport of China, Ministry of Human Resources and Social Security, State Administration of Industry and Commerce, General Administration of Quality Supervision and State Administration of Quality and Technical Supervision jointly issued the *Notice on Directory of the First Batch of High-risk Sports* in which swimming ranks the first, suggesting its highest degree of danger, and there were lots of news about deaths due to swimming every year. The state classifying swimming as high-risk sport has showed high level of attention given to swimming safety. As swimming lifeguards constitute an important line of defence for swimmers' safety, their ability has a major impact on the swimming pool security protection. Lifesaving training is an important mean of improving lifeguards' ability. To enhance the swimming lifeguard training quality in China, based on the comparison between American and Chinese lifeguard training contents, problems in the lifeguard training system in China have been discovered and countermeasures have been provided in this paper, thereby

giving reference to the improvement of our country's lifeguard training quality.

## II. ORGANIZATION OF THE TEXT

### A. Lifeguard's legal status in swimming site

As sports being a special industrial sector in China, the practitioners in this field must possess a certain level of professional skills and the qualification recognition system<sup>[1][2]</sup> has been adopted in China.

As explicitly stipulated in the *Labor Law* and *Vocational Education Law*, the vocational qualification certificate system is a system for labor employment in China. The *National Health Regulations* issued and implemented by the State Council in 2009 has further clarified that 'the state shall carry out the vocational qualification certificate system for the social sports instructors with fitness guidance as occupation. The instructors engaged in high-risk sports with fitness guidance as occupation shall obtain the vocational qualification certificate as required by relevant State regulations'<sup>[2]</sup>.

Since the operation of swimming pool is within the high-risk sports business scope, China has practiced administrative licensing system for this business. In accordance with the provision of Article 6, Paragraph 2 of the *Administrative Measures for Permission of Business Operation of High-risk Sports*, it's required to have a specified number of social sports instructors and rescuers with national vocational qualification certificates. the interpretation for this Article is: having a certain number of lifeguards is one of the required conditions for business application of swimming pool<sup>[3]</sup>. According to the *Conditions and Procedures for Approval of Business Operation of High-risk Sports (Swimming)*, the lifeguards in business site of swimming pool shall meet the national standards (GB 19079.1-2003) and shall have obtained the vocational qualification certificate (along with the copy) uniformly printed by the Ministry of Human Resources and Social Security, meanwhile they are required to attend regular training sessions<sup>[4]</sup>. The implementation of the above provisions is inspected and supervised mainly by the local people's government sport departments at or above the county level.

With relatively sound legal system, America has more powerful strength of protection for swimmers' safety. First of all, running a swimming club also shall follow certain legal procedures: the application for archival filing to government departments is to provide materials such as safety program and information sheets about lifeguards who are required to possess certain qualifications, if without such materials, the government departments will not approve the application. In addition, the prerequisite for opening up a swimming pool is to join the local swimming association, adopting the mode of industry self-discipline and ensuring each swimming pool equipped with a certain number of lifeguards<sup>[5]</sup>. Finally, as stipulated in the American federal law, any swimming pool – large or small – must have professional lifeguards in charge of maintenance management during opening hours, if without a specified number of lifeguards, the operator shall bear severe legal responsibility once accident occurs.

By comparison, both America and China have made legal provisions of a certain number of lifeguards being the essential condition for running a commercial swimming pool. In China, it's mainly the sport department that takes charge of the inspection and supervision over the conditions of lifeguard allocation in commercial swimming pool; while America mainly relies on industry self-discipline and impeccable legislation to ensure the rational allocation of security personnel in swimming pool. It can be seen from the the comparison that, on the one hand, China has attached great importance to the swimmers' life security in swimming pool, however, on the other hand, the legal system in China is unsound and the self-discipline atmosphere in swimming industry has not been formed yet.

#### *B. Training institutions in America and China*

The vocational qualification training for swimming lifeguard practitioners in China is generally directed by the Labor Security Administration Department, organized and managed by the Sport Administration department and specifically implemented by corresponding educational training institutions with training time, aims and demands executed according to the national vocational standards. Training materials are uniformly arranged by the Sports Bureau of each province along with the General Administration of Sport of China. Upon qualification of training, practitioners may participate in the occupation skill appraisal and those who have passed appraisal can obtain the corresponding vocational qualification certificate.

The vocational qualification training for swimming lifeguards in America is organized by non-government institutions. Three renowned swimming lifeguard training institutions in USA include: American Red Cross, Geoff Ellis Associates, National Water Security Company (North America) (NASCO).

It can be learned from the comparison that the swimming pool lifeguard training institutions in China possess management and training dual functions, lacking certain supervisory mechanism, which may affect the lifeguard cultivation quality<sup>[6]</sup>. Whereas, in America, non-government institutions take charge of the cultivation and identification of

swimming pool lifeguards under mutual supervision, and meanwhile the American legal system is quite sound, thereby having guaranteed the lifeguard cultivation quality to some extent.

#### *C. Comparison of teaching and training contents*

It can be seen from Tables 1, 2 and 3 that: it generally takes about a week for the lifeguard training (including the assessment) in China, 8 hours of training per day, approximately 64 hours in total; while in America, it takes 88 hours, lasting for about 22 days, 4 hours of training per day, and teachers will give after-class assignments when the training is over every day. By comparison, one can draw a conclusion that the training in China adopts “duck-stuffing” mode, the training cycle has been shortened, teachers play a dominant role in training process and students just passively accept what they have been taught; however, the lifeguard training in America pays more attention to the cultivation of students' self-learning ability, through form of assignment, inspiring students to learn with task, which is worthwhile for us to learn from.

Based on the analysis of syllabus content, America lays more emphasis on the field first aid content, study of which will be completed in 24 credit hours, and training unit can be the local Red Cross, First Aid Association, etc. This part of content is compulsory course, with assessment including theoretical examination and practical examination (practical examination includes dressing, cardiopulmonary resuscitation (CPR), external defibrillation, etc.). Even though the lifeguard training in China also pay much attention to the field first aid content, the practical examination only includes CPR and moreover applies “one-vote veto” system, namely, the lifeguards will not pass the assessment if his or her CPR is not qualified. From the comparison, it can be learned that the training requirements for field first aid in China are lower than those in America, mainly reflected in the following aspects: (1) Training time, there is more training time in America than that in China; (2) America attach great importance to the training for rescue of different groups of people, such as diabetes, children and people with epilepsy; (3) America attach great importance to the training for operation of lifesaving equipments like automatic external defibrillator (AED); (4) In America, the field rescue training is mainly taken charge and completed by local Red Cross and First Aid Association while that in China is mainly accomplished by training schools, furthermore, there is a certain difference in the competence between American and Chinese training staff, the former is professional and the latter is amateur.

Based on the analysis of Table 1 and Table 3 as well as the interview with some lifeguards, it can be learned that the lifeguard practice training in China depends mainly on the examination outline, with no expansion of training knowledge, and all training sites are craze to vie with each other in passing rate while have ignored the overall cultivation of lifeguards' capability. However, America has cultivated the lifeguards from comprehensive aspects, with training contents including personal positioning, notes for shift changing, methods for communication between lifeguards, communication between lifeguard and swimmer, etc. Through the above analysis, one

can draw a conclusion that the lifeguard training in China has a distinctive exam-oriented purpose while the lifeguard training in America fits in with work practice.

The major training material for lifeguard training in China is *Swimming Lifeguard (Lifesaving in Swimming Pool)* which was jointly compiled by the Vocational Skill Testing Guidance Center of General Administration of Sport of China and China Life Saving Association. The lifeguard assessment is performed mainly based on the *Rules for the Implementation of National Vocational Skill Appraisal and Assessment for*

*Swimming Lifeguards* (hereinafter referred to as “Rules”) released by the General Administration of Sport of China in Jan. 2012. The *Rules* is regarded as the lifeguards’ examination outline, stipulating the skill examination contents, assessment standards, grading rules, etc. In America, the training materials vary from state to state, taking Vancouver as an example: the *Vancouver Lifesaving Manual* is mainly applied but it does not include the field first aid content, while the field first aid content is included in Chinese lifeguard training material.

Table 1 Syllabus for lifeguard training in China <sup>[9]</sup>

| Date           | Day one        | Day two                         | Day three                      | Day four                    | Day five                   | Day six                                 | Day seven                  | Day eight       |
|----------------|----------------|---------------------------------|--------------------------------|-----------------------------|----------------------------|---|----------------------------|-----------------|
| a.m. (3 hours) | Basic theories | Theory<br>Specific<br>Lifeguard | Lifeguard Filed<br>to Practice | Lifeguard Filed<br>Practice | Swimming<br>Special Theory | Swimming<br>Special Theory              | Swimming<br>Special Theory | Skill appraisal |
| Place          | Classroom      | Classroom                       | Classroom                      | Classroom                   | Classroom                  | Classroom                               | Classroom                  | Classroom       |
| p.m. (5 hours) | Basic theories | Theory<br>Specific<br>Lifeguard | Lifeguard Filed<br>to Practice | Lifeguard Filed<br>Practice | Swimming<br>Special Theory | Field Practice<br>of Swimming<br>Skills | Swimming<br>Special Theory | Skill appraisal |
| Place          | Classroom      | Classroom                       | Swimming pool                  | Swimming pool               | Classroom                  | Swimming pool                           | Classroom                  | Swimming pool   |

Table 2 Syllabus of first aid and nursing in water as well as CPR for lifeguard training in America <sup>[10]</sup>

| Teaching times<br>and credit<br>hours | Content  | Teaching form and place                 |
|---------------------------------------|--|---|
| Day one<br>Lesson one<br>4 hours      | Introduction, principles and legal implications of first aid; Personal protective equipments; Assessments of the rescue scene and patient(s); Rescuing with assistance from many people; Methods of CPR; Respiratory emergencies; Judgment of consciousness of adults and children with blocked airway; Rescue plans for unconscious adults and children with blocked airway; Artificial circulation of CPR; Operation of AED; CPR operation on adults and children. | Lecture/ Lecture hall                   |
| Day two<br>Lesson two<br>4 hours      | Practicing the rescue of unconscious adults and children with blocked airway; Learning the artificial circulation method of CPR; Learning the operation of AED.  | Lecture/ Swimming pool,<br>lecture hall |
| Day three<br>Lesson three<br>4 hours  | Rescue plans for injuries of different body parts (including soft tissue injuries, facial injuries, intoxication, bone and joint injuries, abdominal and thoracic injuries).   | Lecture/ Swimming pool,<br>lecture hall |
| Day four<br>Lesson four<br>4 hours    | Airway obstruction and CPR on babies; Diabetes emergencies; Heat/cold-related illness; Head and spinal cord injuries; Epileptic seizure; Rescue plans.   | Lecture/ Swimming pool,<br>lecture hall |
| Day five<br>Lesson five<br>4 hours    | Reviewing CPR and spinal injury nursing.   | Lecture/ Lecture hall                   |
| Day six<br>Lesson six<br>4 hours      | Rescue plans for spinal injury in water; First aid evaluation.   | Lecture/ Swimming pool,<br>lecture hall |

Table 3 Syllabus for national swimming pool lifeguard (NL) training in America <sup>[10]</sup>

| Teaching times and credit hours            | Content  | Teaching form and place              |
|--|--|--------------------------------------|
| Day one<br>Lesson one<br>4 hours           | Arrangement of various lifesaving appliances; Introduction of water fitness; Movement of safeguard station; Victim simulation; Introduction, expectation and evaluation of national lifeguard training; Characters, responsibilities and physical quality test of lifeguards. Assignment: chapters 1 and 6 of textbook, section 1 of <i>Vancouver Lifeguard Manual</i> . | Lecture/ Swimming pool, lecture hall |
| Day two<br>Lesson two<br>4 hours           | Fitness; Lifeguard's skills; Lifeguard's work procedure; Observation method, positioning and diving save of lifeguards; Methods of communication between lifeguards; Communication between lifeguard and swimmer. Assignment: chapter 2 of textbook.   | Lecture/ Swimming pool, lecture hall |
| Day three<br>Lesson three<br>4 hours       | Key points of lifeguard's work; Lifeguard skill training; Lifesaving simulation; Physiological manifestations of drowners; Control of conscious drowners; Stressful events management. Assignment: chapter 3 of textbook, Basic Division of Work of Lifeguards.  | Lecture/ Swimming pool, lecture hall |
| Day four<br>Lesson four<br>4 hours         | Fitness; Skill improvement; Unconscious process; emergency care of drowners in coma; AED application. Assignment: chapter 4 of textbook, First Aid Task.   | Lecture/ Swimming pool, lecture hall |
| Day five<br>Lesson five<br>4 hours         | Fitness; Unconscious complications; Searching and lifesaving simulation; Introduction of oxygenic therapy and oral airway. Assignment: chapter 8 of textbook, section 2 of Lifeguard Manual: Basic Lifeguard Test.   | Lecture/ Swimming pool, lecture hall |
| Day six<br>Lesson six<br>4 hours           | Fitness; Emergency treatment for spinal cord injuries; Professional rescue; Rescue by single lifeguard; Secondary investigation. Assignment: Responsibility Assignment.  | Lecture/ Swimming pool, lecture hall |
| Day seven<br>Lesson seven<br>4 hours       | Fitness; Rescue simulation; .Handling of acute events; Emergency care for allergic constitution; Application of auxiliary means in first aid. Assignment: chapters from 3 to 6 and chapter 9 of textbook <i>Vancouver Lifeguard Manual</i> .   | Lecture/ Swimming pool, lecture hall |
| Day eight<br>Lesson eight<br>4 hours       | Emergency treatment for spinal injuries; Professional rescue; First aid review. Assignment: chapter 11 of textbook: Legal Liabilities for Delays in Rescue.  | Lecture/ Swimming pool, lecture hall |
| Day nine<br>Lesson nine<br>4 hours         | Emergency rescue; Lifesaving simulation; Lifeguard-related labor laws; Swimming pool lifesaving practices; Swimming pool analysis; Issues related to lifeguards and laws .   | Lecture/ Swimming pool, lecture hall |
| Day ten<br>Lesson ten<br>4 hours           | Introduction to methods of professional rescue; Lifesaving simulation. Assignment: chapter 7 of lifeguard textbook: Lifeguard's Liabilities for Breach of Contract.  | Lecture/ Swimming pool, lecture hall |
| Day eleven<br>Lesson eleven<br>4 hours     | Quality training; Lifesaving simulation; Brief introduction of water treatment in swimming pool; First aid test.   | Lecture/ Swimming pool, lecture hall |
| Day twelve<br>Lesson twelve<br>4 hours     | Lifesaving simulation.   | Lecture/ Swimming pool, lecture hall |
| Day thirteen<br>Lesson thirteen<br>4 hours | Introduction to present situation of lifesaving technology development (introduction of lifesaving technology competition procedures and major lifesaving competition events) and to competition procedures and sports activities; Evaluation on current status of drowners.   | Lecture/ Swimming pool, lecture hall |
| Day fourteen<br>Lesson fourteen<br>4 hours | Prior actions; How to remove obstacles for emergency treatments; First aid standards; First aid steps  | Lecture/ Swimming pool, lecture hall |
| Day fifteen<br>Lesson fifteen<br>4 hours   | Notes for lifeguards' shift changing; Arrangement of lifesaving measuring platform and notice plate; Review of lifeguards' water teamwork.   | Lecture/ Swimming pool, lecture hall |
| Day sixteen<br>Lesson sixteen<br>4 hours   | Closed-type lifesaving examination.  | Swimming pool                        |

#### D. The contrast of examination content of American and Chinese lifeguards

From Table 4, we know that Chinese lifeguard examination includes three parts, namely compliance projects, practical operation and theoretical examination. Compliance projects contain 25 meters swimming and 20 meters diving, in which 25 meters swimming requires the time to go up to the standard (for different grade and different gender, time request is different to some extent), and 20 meters diving should meet certain technical requirements and has no time limit. Only

compliance projects are eligible, lifeguard can obtain examination qualification. Examination of the practical operation mainly includes safety precautions, scene firefighting, first aid, and its full credit is 100 points, 60 points is qualified. But if cardiopulmonary resuscitation (CPR) of the scene first aid is not qualified, then lifeguard examination will not pass. Theoretical part mainly examines the lifeguard basic theoretical knowledge, and its full credit is 100 points, 60 points is qualified.

Table 4 Examination content of Chinese lifeguards

| Compliance projects | Practical operation | Theoretical part                      |
|---------------------|---------------------|---------------------------------------|
| 25 meters swimming  | Safety precautions  | Lifeguard basic theoretical knowledge |
| 20 meters diving    | Scene firefighting  |                                       |
|                     | Scene first aid     |                                       |

The lifeguards in America, according to different nature of work, need different kinds of certificates which have showed qualification of different works, for example, lifeguards who only have lifeguard certificate for swimming pool and Water Park can not engage in sea rescue work. But no matter which kind of life-saving certificate, lifeguards must pass the examination of cardiopulmonary resuscitation (CPR), automated external defibrillator (AED), and first aid training, and these three examinations must obtain certificates.

Table 5 shows American examination content of swimming pool life-saving, and swimming skills examination is a compulsory item which is the premise of a lifeguard qualified. The requirements of swimming skills for different training schools are basically identical. Swimming skills examination sometimes will encounter some changes, but before this, American Red Cross and various training schools will publish a brief description of the test program on the website homepage. Examination content generally contains two parts, (1) swimming endurance test, uninterruptedly and unlimitedly, swimming 300 yards in three strokes; (2) diving, retrieving 10 pounds objects in the form of diving at the bottom from the 7-10 feet depth.

Table 5 Examination content of American lifeguards

| Physical requirements  | Certificates for first aid | Examination of simulated lifeguard | Theoretical part                      |
|--|----------------------------|------------------------------------|---------------------------------------|
| Swimming 300 yards in three strokes                                  | CPR                        | Safety precautions                 | Lifeguard basic theoretical knowledge |
| Retrieving 10 pounds objects at the bottom from the 7-10 feet depth. | AED                        | Scene firefighting                 |                                       |
|  | First aid training         |                                    |                                       |

Contrasting examination content of American and Chinese lifeguards, requirements of swimming skills, and simulated lifeguard are roughly same. But they have difference in first aid. First aid training in America is mainly completed by the Red Cross, hospitals and other professional training institutions, and training process and training equipments are professional; and first aid training in China is mainly completed by the lifeguard training institutions, and trainers are amateur. The examination of first aid is separated from the examination of lifeguard, and the examination content includes cardiopulmonary resuscitation (CPR), automated external defibrillator (AED), first aid training, requiring to pass these three so that can obtain the qualified certificate. This shows that America attaches higher importance to life than China, and takes preventive measures in terms of lifesaving.

### E. The validity and registration of lifeguard certificate

According to the spirit of *Notice on the Implementation of the Registration Certificate of Chinese Life Saving Association Swimming Lifeguard* (Swimming Word [2009] No. 144) stipulated by State General Administration of Sports, every year our swimming lifesaving certificate should be registered with subjects from the age of 18 to 60, and people who have obtained the swimming lifeguard National Vocational Qualification and all the personnel who engage in lifesaving work of open indoor and outdoor swimming pools, and a natural lake natatorium, should participate in the review projects, including (1) the full action of cardiopulmonary resuscitation (CPR), (2) 25 meters quick swim, (3) 20 meters diving, (4) the water joint action, (5) land extrication from grabbing of the drowning, in which the first three grades must be above qualified, unqualified should not be allowed to register. All lifeguards must hold two certificates (swimming lifeguard National Vocational Qualification and the registration certificate of Chinese lifesaving Association swimming lifeguard), and the retraining registration work should be inspected annually. For people who lost documents or did not be inspected for annual registration on time, it is determined to forbid them to engage in swimming lifesaving work.

American swimming life-saving certificate is valid for two years. Before the expiration of two years, lifeguards must attend review and recertification. Before review and recertification, lifeguards must attend the relevant training, and training content is basically same with the examination content for the initial participation. When review, lifeguards should take part in the various relevant tests and all qualified may continue to engage in swimming lifesaving work, otherwise they are not allowed to engage in swimming lifesaving work. If swimming spots hire employees with expired qualification certificate to engage in swimming lifesaving work, they will be fined by the government department, or even local swimming association (LCS) will be deprived of its membership, and forbidden its normal business.

America has completed various legal norms, and once swimming clubs are not operating in accordance with the specification, when safety accidents happen, the clubs will take seriously legal responsibility. Life-saving certificate should be registered and reviewed every two years, which is more reasonable, and the swimming clubs should be effectively supervised by the Local Swimming Lifesaving Association, and Swimming Association. And the management way mainly depends on the combination of industry's self-discipline, national laws and regulations, insurance, etc. Besides the lifeguard registration system has a relatively standard supervision, management and execution. The registration system of lifesaving certificate in our country still belongs to the early stage, and pays great attention to the form in the actual operation process, for example, about May each year, the city Sports Bureau notices registration whose form is greater than the content. Lifeguards just need to pay the registration fee and seal, and then finish the registration, even if lifeguards themselves do not go to the scene. Local sports departments rarely go to swimming pools to supervise if lifeguards have life-saving certificate, and management is not

well done, for the legal system is not sound, and departments' sense of responsibility is not strong.

### III. CONCLUSION

By comparing the lifeguard training model of America and China, it reflects different national political system pays different attention to life safety. America and China both confirm lifeguards' status in the commercial swimming spots by the form of legislation, but their supervision models are different. In China, we mainly rely on sports departments' supervision and regulation, while America mainly depend on industry self-discipline, local government departments, improved laws and regulations to supervise the swimming spots. Compared with lifeguards' training content, it can be found that America stresses the training of lifesaving details, the training content starts from the practical work regulations, modern lifesaving equipments are used in the training process, and the first aid skills should reach the standard of Red Cross. Lifeguard training in China pays attention to the maneuverability of practice examination, and examination content is closely related to the training content, but training in first aid has certain deficiencies, modern lifesaving equipments are used less, and training content is relatively simple with strong test characteristics, suggesting that the lifeguard training has certain deficiency in our country.

The lifeguard training in our country is identified by the official uniform organization, and have the official organization to supervise the implementation; The lifeguard training in America is organizes by the folk organization, through self-discipline, and laws and regulations to ensure its reasonable operation. Lifeguard examination content of China and America has certain similarities, such as examination of swimming, diving skills, but also have differences, for example, the examination of China's first aid is listed as a lifeguard examination content, while America's is as a lifeguard qualifications. Besides, the examination lifesaving skills in both are basically same.

The lifeguard certificate in China is valid for one year, and in the second year, it must be registered to take effect, but because of lax supervision, against the original intention of registration; The lifeguard certificate in America is valid for two years, and two years later, it will be effective through registration, which is supervised by swimming industry association and local government departments.

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