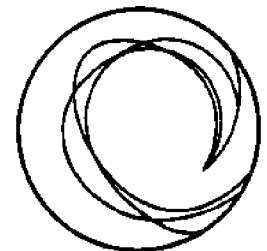


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DIVER EDUCATION SERIES

Voluntary Requalification

Lee H. Somers



Michigan Sea Grant College Program

MICHU-SG-86-505

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Price \$1.00

VOLUNTARY REQUALIFICATION

Lee H. Somers, PhD

Unlike military and scientific/academic divers, most recreational scuba divers are not subject to periodic requalification (or recertification) requirement. Some diving clubs and at least one certifying agency have developed requalification procedures. However, most recreational divers and agencies **aggressively oppose** mandatory requalification. This is understandable from a viewpoint of economics, "freedom," and so forth. However, in a physical activity such as scuba diving, a knowledgeable and reasonable individual should impose personal **voluntary** requalification requirements.

DIVING ACTIVITY

To be considered a qualified diver status one must simply **dive**. I suggest that a diver must make at least 15 dives per year to be considered an active diver. Furthermore, no more than two dives on any given day should count toward this 15 dive minimum, and a diver should have at least one diving day in any three month period. In other words, one Caribbean diving trip involving 15 dives over a 5 day period is insufficient for retaining a qualified diver status. I am aware that environmental restraints such as extremely cold weather and ice cover may prohibit strict adherence to this type of schedule. And I am not encouraging persons to participate in adverse weather and under ice diving unless they have the specific training **and** personal desire to do so. However, I am encouraging active spring, summer, and fall diving under appropriate conditions and mid-winter diving vacations in warmer climates. Also, many ice bound northern divers can find exciting and interesting dive sites during most winter months in states south of the Ohio River without necessarily traveling to Florida or the Caribbean. Some of these sites are accessible on three-day weekends. Some northern dive tour guides sponsor excellent "long weekend" trips to Florida dive sites. These trips often include specialty training in activities such as current diving and cavern diving.

MEDICAL EXAMINATION

Commercial, military, and scientific/academic divers are required to pass annual medical examinations. Recreational divers should develop a self-imposed periodical medical examination program. Although a complete medical examination similar to that used for working divers is desirable, the recreational diver is encouraged to develop a personalized examination protocol with his/her personal physician. An annual

chest x-ray, for example, may or may not be required by your physician. Special attention to one's medical fitness is a matter of "common sense," especially in the over thirty years old age group. However, even teenagers can develop medical problems that are inconsistent with safe diving. Needless to say, the examining physician must be familiar with the unique physiological aspects of diving.

PHYSICAL FITNESS PROGRAM

As previously stated, scuba diving in itself is not an adequate physical fitness development or maintenance activity for the average participant. Diving must be supplemented with a regular physical exercise routine. A fitness program must be designed to meet the individual's needs and motivations. Any form of aggressive exercise on a regular basis should prove beneficial. Endurance-oriented weight training, swimming, jogging, cycling, cross-country skiing, hiking, underwater hockey and so on will contribute to a high level of general fitness for the seasonal diver. Although some authorities advocate simply swimming with fins as the best form of physical conditioning for divers, I feel that this activity offers limited advantages to the average participant. Naturally, a routine pre-dive season schedule of swimming pool workouts with fins will be beneficial for leg muscle development. However, from a cardiovascular conditioning standpoint other, more physically demanding activities should be considered.

Diet or weight control is an extremely important consideration, especially during periods of relative inactivity. In some individuals eating habits can lead to very rapid weight gain. Generally speaking, it is easier to gain weight than lose weight, especially for the less active, over 25 age group. Obesity may have some limited benefits for "staying warm" in cold water. However, excessive body fat is contraindicated from a standpoint of general condition and decompression sickness susceptibility. Fitness and physical conditioning is an "individual thing." The benefits for the scuba diver are obvious. Being able to demonstrate to yourself that you are physically fit is a part of your voluntary requalification program.

I feel that all divers should be capable of swimming at least 400 yards and be in reasonable physical condition. The 12-Minute Swimming Test (The Aerobics Way by Kenneth H. Cooper) is an excellent "self-evaluation" mechanism. The test can be self-administered in a swimming pool. A diver should fall in Category III (Fair) or better. This means that a male between 20 and 29 years old must swim 500 yards in 12 minutes; a female, 400 yards. If you are unable to complete at least a 400 yard swim and/or perform poorly on the fitness test, the development of a personal training program to improve your fitness and performance is absolutely necessary. Please do not attempt a "maximal effort" activity "unless you are under 35 years of age, are

already conditioned, OR have progressed through at least the first 6 weeks of one of the (conditioning) programs." All divers are encouraged to acquire a copy of The Aerobics Way or an equivalent personal training guide.

OFF-SEASON SKILL MAINTENANCE AND OTHER ACTIVITIES

Scuba diving in a swimming pool is not an unacceptable activity. During winter or off-season months divers are encouraged to practice skills at least once per month in a swimming pool. This is an excellent opportunity to review all aspects of basic skill training and lifesaving with your diving buddy and to assess the skill of anticipated new diving buddies. Skills such as buddy breathing, which are not commonly practiced during openwater diving, should be given special attention. This is also an opportunity to learn to safely and properly use new equipment such as variable-volume suits and buoyancy systems. Diving clubs often promote special training, skill contests, underwater hockey (for fitness and fun), and so on. Skin and scuba diving in a swimming pool need not be considered an undesirable or boring activity. Arrangements for special group pool sessions must be made well in advance. Generally, skin and scuba diving will **not** be permitted during general recreational swimming periods. Special attention must be given to equipment maintenance since chemically purified pool water can be just as harmful to your equipment as sea water. Also, special precautions must be observed in order to prevent unnecessary damage to the pool facility itself.

In addition to a skill maintenance program, divers should use off season months to research prospective dive locations through literature, correspond with other divers, and so on. Summer diving activities can be planned and scheduled, rooms reserved, boats chartered, etc. Research/planning should include determination of emergency facilities and procedures. Preliminary planning is a key to safe, pleasurable diving. A proper and safe diving attitude is just as important as skill and fitness.

EQUIPMENT MAINTENANCE

Diving is an "equipment" oriented activity. Few activities require that an individual use an umbilical-supplied or self-contained life support system to maintain normal life function in an otherwise non-life supporting environment for human beings. Malfunction of equipment underwater can lead to a life-threatening situation. The diver is equipped with both primary and, in some cases, emergency equipment that must be maintained in proper operating condition at all times.

Periodic "requalification" for safe diving not only includes the diver, but also the diver's equipment. Although routine equipment maintenance procedures are required for each dive, the

following special periodic and/or annual procedures must be considered:

1. **Annual inspection of regulator(s) and submersible pressure gauge by qualified person.** This inspection may also include lubrication/replacement of rubber parts, adjustments, and replacement of other worn/damaged parts. Annual inspection and maintenance also includes the "octopus" and pressure gauges! Many repair facilities now have performance analysis equipment. Maintain in your logbook a record of inspection/repair date, person (and facility), and work required and file the repair receipt. This is useful for future resale, trade-in, or warranty service requirements. **Note:** If a malfunction is suspected, have the regulator serviced immediately. Do not delay until "annual" inspection time. Even if a regulator is not used during the preceding 12 months, it must be inspected and properly maintained prior to use for diving.
2. **Annual scuba cylinder inspection.** All scuba cylinders are to be internally and externally inspected on an annual basis for corrosion, contamination, and damage. An inspection decal is placed on the cylinder indicating the date and facility (inspector). Every five years, or more often if internal corrosion/external damage is evident, the cylinder must be hydrostatically tested. This test date is stamped into the cylinder metal. Remember that the annual inspection should also include inspection (and repair, if necessary) of the cylinder valve including placement of cylinder to valve o-ring. Record all inspection/repair information in logbook and file receipts. Remember to inspect and repair (if necessary) backpack cylinder clamps and the harness/quick-release mechanisms.
3. **Annual depth gauge evaluation.** Depth gauge error can be caused by repeated use, abuse (even minor), and deterioration with age. Although few repair facilities are equipped to perform an "accurate" depth gauge analysis, the diver should make an effort to find an appropriate facility. Shallow, in-water evaluations can be made by the diver using an accurately measured line or chain. Record test results in your logbook and secure a "correction" tab to depth gauge side or strap.
4. **Buoyancy compensator test.** The buoyancy compensator must be routinely inspected prior to and following each dive. However, periodic maintenance must include:
 - a. Flushing/disinfecting interior,
 - b. Lubrication of CO₂ inflation system,

- c. Verification of CO₂ inflation function by activating a CO₂ cylinder every 6 months, 30 dives, or if malfunction is suspected,
 - d. Professional inspection/repair of air inflation system,
 - e. Inflation (hold for 4 hours without significant gas loss) and leak test (in water),
 - f. Harness inspection and repair, and
 - g. Verification of over-pressure valve function.
5. **Inspect and sharpen knife.** A "dull" knife may prove useless in an emergency. Also, a damaged knife sheath may result in loss of a valuable knife.
 6. **Weight belt release.** The weight belt release must be inspected to ensure that it will not accidentally release during normal use, but properly release in an emergency.

The six items of equipment listed above are all important to the diver's safety. However, every item of equipment used by the diver must be in excellent operating condition at all times. For example, variable-volume dry suits require special maintenance procedures for valves, zippers, and seals. Consult diving manuals and manufacturer instruction materials for maintenance information on specific items of equipment. Your life or that of your buddy may well depend on your equipment maintenance program.

CONTINUING EDUCATION

All divers should be trained in first aid, cardiopulmonary resuscitation, and lifesaving. This is an excellent off season activity to complement year around diving. Colleges, diving stores/schools, and recreation departments conduct a variety of specialty programs during the winter months including seminars or classes on such topics as underwater photography, underwater physiology and ice diving. Excellent underwater photography courses at Caribbean diving resorts permit the diver to combine a continuing educational experience with a winter diving vacation. This is a wise investment for the developing photographer.

Specialty training in activities such as wreck diving, search and recovery diving, advanced diving, current diving and so on also represent an excellent way to remain active during the diving season. The diver should take advantage of every possible opportunity for special environmental training. For example, any midwest diver traveling to the west coast should make arrangements to train in beach (surf entry), kelp, and offshore boat diving. Information regarding instruction in vacation areas can be acquired through national instruction agencies and dive

shops/tour guides in the area you intend to visit.

For avid recreational divers with "extra money," several commercial diving schools offer excellent training in surface-supplied diving, bell-saturation diving, diving emergency medical techniques, and so on. The cost may exceed \$2,000 plus living expenses and course durations may exceed 4 months. This is vocational education. Entry requirements are high and in some cases only a relatively small percentage of applicants are actually accepted. However, even if you do not choose to seek employment in the offshore diving industry, the training and experience gained through a commercial diving education is exciting and unique. Remember, successful completion of a commercial diving course does not guarantee a career in commercial diving. However, if you can afford this type of training, the experience will be worth it. Any person considering a commercial diving vocation or enrolling in a commercial diving school should read Nic Zinkowski's Commercial Oil-Field Diving and write to several schools for literature.

Some universities offer special short courses, workshops, and clinics in hyperbaric chamber operation, surface-supplied diving, fish identification, ecology, general oceanography, marine biology, and research diving. Although these courses do not provide occupational level skill, they do give the diver an insight into a variety of diving activities at a nominal cost.

Finally, many divers will find considerable personal satisfaction, challenge, and employment opportunity as a scuba diving instructor. These individuals are encouraged to first seek training in advance diving, divemaster, and assistant instructor courses. Before attending an instructor training/certification course, the assistant instructor should assist an instructor in several basic scuba diving courses and develop a "self-preparation" program.

DIVE CLUB

Dive clubs vary in popularity and amount of benefit to the member from one geographic location to another. Often they are more "social club" oriented rather than "diving" oriented. However, the club does afford the opportunity for people with a common interest to share experiences and activities. The active dive club can have pool practice sessions, sponsor both weekend and vacation diving expeditions; sponsor CPR, first aid and lifesaving courses; sponsor "fitness" programs; research diving sites; and conduct numerous other activities. The key word is "involvement!"

BIG BROTHER - BIG SISTER PROGRAMS

Diving knowledge, procedures and equipment is progressively changing. Students trained 5 years ago may not be familiar with new buoyancy systems, multi-level diving, new logbooks, improved first aid techniques, etc., that are commonly taught in current courses. Also, skill and knowledge deteriorates with time. On the other hand, new trainees must absorb a considerable amount of knowledge and learn relatively complicated skills in a very short period of time. Often the lack of assistant instructors and poor teaching conditions leads to buddy helping buddy. Although this is a necessary and important part of training, inadequate learning can result in "the blind leading the blind."

The "big brother-big sister program" implies **voluntary retraining** in basic skills and knowledge on a periodic basis. This concept can be especially effective in a club teaching situation. Each new trainee is assigned an experienced diver to serve as a big brother or big sister through basic training and for a specified period of time following completion of the course. The experienced diver participates in all pool, classroom, and open water training sessions with the trainee. In addition, outside of class he/she helps the new student with homework, equipment selection, and so on. Naturally, the instructor must properly screen and orient the big brothers and sisters to prevent "over-helping," transmission of bad habits, and misinforming basic students. Also, basic students must be given ample opportunity to practice skills with other students under the critical observation of their big brother or sister.

Properly managed, the "big brother - big sister" program can provide training for new divers and retraining for experienced divers. Most important, the newly trained diver can acquire valuable and safer openwater diving experiences after completion of basic training. I suggest that the big brother-big sister relationship continue for 10 to 20 dives under various conditions following basic training. Voluntary participation as a big brother or big sister every three to five years can do much to improve the experienced diver and provide a safer introduction into diving for the beginner.

CONCLUSION

Can you "requalify"? Every safe diver must know his or her personal limitations. Through remaining active and "voluntary requalification" you can be a better and safer diver.