

An Examination of Overhead Olympic Weight Lifts in the Training of Combat Sport Athletes

James Smith 2006

World class Olympic weightlifters constitute a large percentage of the strongest and most powerful athletes on the planet. The training of world class weightlifters deserves the special attention of any trainer of athletes.

Trainers of athletes must understand that each training means presents a certain degree of cost and a certain degree of benefit relative to a host of factors. In regards to the perfection of combat sports form, it is the opinion of the author that the performance of overhead Olympic weight lifts presents an unfavorable condition.

This material was not written to discourage the utilization of overhead Olympic weight lifts in the training of other sportsmen. In contrast, the directive of this material is to ensure that the coach/trainer/athlete has an understanding of the various transference effects of the means yielded towards the perfection of combat sport form and the structural stressors yielded by the following irritants:

- GPP training means
- Combat sport practice (SPP training)
- Contests

It is encouraged that coaches/trainers/athletes to commit to the unending process of perfecting the training.

Short of practicing the special exercise(s) at varied intensities, the Strength and Conditioning (S&C) training for any athlete represents the development of general and general specific motor task parameters. Put simply, the development of various regimes of strength, power, speed and endurance do not directly raise the athlete's expression of sports skill. (RE the author's article entitled The Classification of the Means).

The development of Special Physical Preparedness, however, which for athletes is the practice of isolated sport skill permutations, specific means, and sport itself, yields a direct training effect which in turn raises the athlete's motor potential for expressing sport skill. For this reason, it is fundamental for trainers of athletes to understand that their responsibility to the athletes is to implement training methodics which serve to develop and/or retain the various general and general specific motor abilities which yield resistance to injury and heighten the potential for an athlete to more effectively express sport skill. In so doing, the implementation of means must not present an unwise cost to the organism. The

coach/trainer must be aware of the stressors encountered during SPP practice and competitions in order to construct an orthopedically sound training program.

Here in the U.S. the utilization of various overhead Olympic lift (OL) derivatives, by numerous S&C coaches, have been highly popularized. World class weightlifters are incredibly strong and powerful and often exhibit excellent performances in vertical/standing broad jump tests, and very short sprints. The performances in these drills offer a significant insight as to an athlete's ability to generate relative strength and power. The ability to generate high levels of relative strength/power is of paramount importance to virtually any power development athlete.

As one observes the strength and power capabilities of highly qualified Olympic weightlifters it is understandable as to why many coaches and trainers, of combat sport athletes, have mistakenly adopted the training methods of weightlifters for the training of their sportsmen. One is in error to assume that overhead Olympic lift derivatives are the only, or most optimal, means of developing explosiveness in athletes. What fails to be considered is that the primary and specific increase in motor potential yielded from Olympic style weightlifting lies in the heightened ability to lift barbells overhead; not in running, throwing, striking, shooting in, taking down, kicking, choking, submitting, skating, checking, scrumming, tackling, blocking, wrong arming, pass rushing, or drive blocking.

It is known that the jerk yields the highest power output of any lift which may be performed with a barbell. The pull during the snatch comes in second to the jerk. Uniformed individuals may then assume that sportsmen who are able to snatch or clean and jerk an impressive load would excel in any sport which requires the demonstration of limit and explosive strength. Unless we are discussing the sport Olympic Weightlifting, however, this is not the case.

Any trainee's ability to perform any barbell exercise with heavy loads or high velocity (power lifts or weight lifts) represents only a fraction of the requisite abilities necessary to demonstrate combat sports form at a high level. Any combat sportsman's primary task is the perfection of the special exercise(s) itself; a process far removed from lifting barbells. This is not to diminish the importance of developing strength and power via lifting barbells; but to offer perspective on its non-specific relationship to the perfecting of combat sports form (specifically during the higher stages of qualification).

There are numerous methods for achieving the development of limit and explosive strength; the overhead Olympic weight lift variants are only one. Additionally, and most importantly, the utilization of overhead Olympic style weight lifts by combat sportsmen or athletes whose primary sporting action exists in the vertical plane (eg high jumpers, volley ball players, etc) presents an unfavorable condition from an orthopedic standpoint.

All combat sport athletes endure tremendous impact stress to the shoulders during contests. For this reason, it is unwise to introduce training means which yield additional, and unnecessary, stress to the shoulders during non-specific training drills.

The acquisition of skill necessary to effectively lift large loads overhead is non-specific, unnecessary, and costly (structurally) for combat sport athletes whose sport skill does not inherently demand the performance of these lifts. The act of supporting a loaded barbell overhead (eg overhead squat, jerk, push press, snatch, etc), in the position of extreme shoulder abduction and external rotation, represents one of the most mechanically compromised articulations of the glenohumeral joint.

The heightened ability to express relative strength/power, of weightlifters, is achieved by developing an abundance of brute strength and power. The ability to lift large amounts of weight in the snatch and C&J, however, is not only a function of the development of max strength/power, but the perfection of lifting technique.

Ironically, many coaches and trainers fail to understand the fundamentals of the very form of training they instruct to their own athletes. Overseas weightlifting coaches initiate tremendously intensive screening protocols in an effort to acquire the most genetically gifted and durable athletes who are capable of positively responding to the extreme demands of their training systems. Additionally, it is imperative to understand that the Olympic weightlifters from overseas (who consistently dominate world competition) spend years developing technical mastery and special strength preparedness. In the west, however, high school, collegiate, and professional athletes often lack any sort of systematized special strength training history what so ever.

Alternatively, those athletes who do possess some semblance of special strength training history were likely exposed to the highly misinformed and misdirected training protocols which infect the preparation of many western athletes. For these reasons, it is irresponsible to subject athletes to the overhead Olympic weight lifts who:

1. Compete in combat sports,
2. Are physically unprepared to safely perform the lifts with any amount of weight,
3. Do not participate in a sport which requires a proficiency in performing the Olympic lift derivatives
4. Are not under the guidance of a coach who is qualified to instruct the Olympic weight lifts.

The sport skill of weightlifting is the demonstration of snatches and C&J's; therefore, lifting/pulling barbells vertically has a tremendously high correspondence for a weightlifter. As stated, lifting heavy weights in the snatch and the C&J is a technical expression of a high degree of special strength preparedness. The perfection of any other sportsman's skill, however, lies in

mastering their respective sport skill, NOT in performing snatches, clean and jerks, bench press, squats, deadlifts, or any other barbell exercise. For any athlete, (weightlifters, powerlifters, and strongmen accepted) lifting weights is GPP, therefore, a general and non-specific means of facilitating the potential for a heightened expression of sport skill.

Not including Olympic lifts, there are numerous means and methods of developing explosive strength. Most importantly, these same alternative training measures are much faster to technically master in comparison to the Olympic lifts. A lift which offers an accelerated learning curve is a highly effective means for any coach/trainer who works with large groups of athletes. Most importantly, any training means which introduce the least amount of stress to a musculo-tendonous apparatus, which already sustains a tremendous beating during SPP/contests, presents a highly favorable condition.

Alternative Methods for Developing Max Strength/Power/Explosiveness

- Lifts in excess of 90%1RM (Maximal Effort Method)
- Lifting sub-maximal weights explosively/ballistically (Dynamic Effort Method)
- Explosive Medicine Ball/implement Throws
- Shock Training- High intensity Plyometric/depth Jumps, Landings, Bounds, etc

Basic compound lifts such as squats, deadlifts, and good mornings (GM) are much less time consuming to instruct/learn than snatches, or C&J's. Any qualified coach can instruct a squat, DL, or GM to a relative novice within a single workout. The utilization of compound lifts and their variations via the Maximal Effort method will yield tremendous development in maximum strength. Additionally, any number of these, and other, lifts may be performed under various isometric and quasi isometric conditions of muscular contraction which will safely and effectively yield tremendous adaptations in trunk/hip girdle, and lower extremity stabilization.

The Dynamic Effort method of training may be realized through performing any lift explosively. For example: the squat, jump squat, scissor squat, DL, bench press, etc, performed explosively, will build tremendous power. Most of these lifts require minimal time for an athlete to effectively assimilate (though the scissor squat/Russian Lunge requires a great deal of balance).

The clean from the floor/hang, clean/snatch pull, are tremendous lifts for developing starting and explosive strength. The time of instruction and acquired technical proficiency of these lifts (specifically the clean variations), however, must not be underestimated. It is strongly suggested that a qualified trainer instruct the lifts to any athlete.

Explosive medicine ball throws are an excellent means of teaching an athlete to

utilize their entire body to generate maximum power via triple extension. The backwards overhead, scoop, chest, and squat throw are tremendous means of developing speed strength. Additionally, medicine ball throws require minimal time to instruct to an untrained athlete and present a negligible risk factor.

Plyometric jumps-landing-bounds, etc, loaded and unloaded, are very effective in teaching an athlete to generate and absorb force and develop the elastic component of muscle fiber and connective tissue. The depth jump, in particular, is regarded by the Soviets as being one of the most optimal and effective means of developing speed-strength as expressed via the hip/knee/ankle extensors. Most plyometric drills have been performed by athletes since they were children on a play ground. Thus, in most instances, their integration into a training program is simply a reintroduction or variation on what an athlete has already done in the past.

Along with the training of flexibility/mobility, general fitness, etc much of the GPP for combat sport athletes must be directed towards developing relative strength/power. SPP, however, must be directed towards heightening the expression of sport skill, not perfecting the technical execution of lifting barbells.

The perfection of technique and the development of special strength, in the classical OL's, is mutually dependent and a time consuming process. Training time for developing GPP is limited for any high school, NCAA, or professional level athlete. The development of GPP and SPP must take place in different environments which require various training assets. Accordingly, time spent in the weight room must be highly organized and cost effective for any competitive athlete.

A cost:benefit assessment must be employed prior to the implementation of any means or methods into the training. The cost may be viewed as the risk factor or time requirement correlated with the instruction or employment of any particular training mean or method. The benefit may be viewed as the reward yielded from the employment of the training mean or method. For example: The instruction/employment of the snatch requires the following components in order to derive any significant adaptations from its utilization:

- Significant knowledge and experience on behalf of the coach/athlete in order to properly instruct/perform the lift
- Extended amount of time to develop proper lifting mechanics necessary to properly lift any significant amount of weight
- A strong base of pre-existing special strength preparedness

Many proponents of the overhead Olympic weight lift variations may claim that the instruction of the lifts is a relatively quick process for an athlete with reasonable trainability. This may be true if the trainee is lifting a broomstick or empty barbell. Unfortunately, such minimal loading will not yield a powerful

training effect. Meanwhile, a very powerful training effect may be realized in a single workout with a host of other means.

In view of this, the utilization of snatch, for example, is too expensive for a combat sport athlete. Additionally, the reality of the situation is that there are an abundance of strength coaches who lack the skills to properly instruct weightlifting. (A two or three day course is entirely insufficient for providing any previously untrained individual with the skill set necessary to properly instruct the Olympic lifts).

A close examination of S&C programs across the nation will reveal the inadequate training and planning skills of the staff.

(Note: the clean, when performed from the floor or the hang, is not an explosive reverse curl executed with the aid of hip extension and accentuated by lifter unnecessarily jumping into the air and smashing their feet into the floor.)

This is compounded by the fact that many athletes are insufficiently prepared to perform overhead OL variations. It is important to note that overseas weightlifters (again, the best on the planet) spend years perfecting technique and building the special strengths necessary to handle significant loads in the classical lifts. For this reason, coaches and athletes must decide whether it is appropriate to spend the time necessary to effectively instruct/perform OL's.

The only athletes who must be proficient at performing OL's are Olympic weightlifters. There is no sport, other than weightlifting, which mandates that an athlete be proficient at performing snatches and C&J's in order to compete at the world class level, not one. Excepting powerlifting, the same may be said about the bench press, squat, or deadlift.

For these reasons it is the coach/trainer's responsibility to possess a broad knowledge of numerous means which serve to develop like qualities. For example: if the trainee lacks leg strength yet exhibits poor free squat mechanics then substitute any of the following lifts, meanwhile attempt to address the problem which is prohibiting proper squat positioning:

- Box squats
- Zercher squats
- Supported safety squats
- Trap bar deadlifts
- Single leg squats
- Lunges
- Step ups
- Jumps (loaded/unloaded) on both legs
- Jumps (loaded/unloaded) on one leg
- Etc. . .

In regards to the cost: benefit, it is important to note that there is an element of risk involved with the execution of any heavily loaded lift. Overhead Olympic weight lift variations demand a higher technical proficiency than many other compound lifts. Subsequently, there is less room for error when performing snatches and C&J's, and their derivatives, with large loads. In view of that, the coach/athlete must make the determination as to whether an injury incurred in the weight room is acceptable relative to the training goal. In other words; is the coach willing to potentially retard the athletes' abilities to heighten sports performance for the sake of introducing a particular non-specific training means. These are the types of considerations the coach must make when determining which means and methods of training are appropriate to employ into the training of any athlete.

It is encouraged that any combat athlete consider the many other viable, easy to learn, and orthopedically sound alternatives for developing strength and power for sport.

The training will always be incomplete. This is an unavoidable circumstance which must be endured by any coach, trainer, or athlete. For this reason, the only logical course of action must be the unending attempt to perfect the training process.

As a result, the eternal question which coaches, trainers, and athletes must ask themselves is: What can be done to perfect the training