In this edition of the NSA Round Table, our panel looks at the issue's Special Topic, the combined events. The questions, set by Advisory Board Member Jim Alford (GBR), are designed to provide a basic background discussion of the Decathlon and Heptathlon which will complement the other articles of the issue.

Once again, we have contributions from our regular participants Alford and Frank Dick (GBR). In addition, Advisory Editorial Board members Vern Gambetta (USA), Victor Lopez (PUR) and Tom MacWilliam (CAN) have prepared their contributions together with combined event specialists. Joining Gambetta is Steve Ogders (USA) who works as a conditioning consultant for professional sports teams in the USA while training and competing in the Decathlon (best of 7991). Assisting Lopez is Brian Mondschein (USA) an assistant coach at the University of Virginia and himself a 7719 Decathlon performer. MacWilliam has the help of Canadian colleagues Andy Higgins and Lyle Sanderson who are the Combined Event Group Coordinators for the CTFA.

What qualities would you look for in a prospective combined event (Decathlon/Heptathlon) athlete?

ALFORD

- Physical: Must be a compromise between the «heavy», explosive events (throws) and the «light», explosive events (jumps and sprints), with a bias towards the latter. Common to all is power - strength plus speed. The 1500m stands on its own. To put it simply, you need athletes who are tall, fast, strong, with good natural coordination and suppleness.

- Mental: Competitive urge, enjoyment of versatility, resilience and determination.

DICK

- Speed
- Height
- Elastic Strength
- Coordination
What qualities would you look for in a prospective combined event (Decathlon/Heptathlon) athlete?

GAMBETTA/ODGERS

Jumping ability, speed, motor learning aptitude, commitment - willingness to train, potential for physical size, throwing power, durability and psychological stability.

LOPEZ/MONDSCHEIN

Certainly one major quality for the prospective combined event athlete to possess would be speed - both absolute speed (as in top running speed) and quickness or explosiveness (maximum velocity for certain limb movements). Sprinting speed for decathletes is needed for the 100 metres, Long Jump, 400 metres, Pole Vault and Hurdles, while explosiveness would factor into all the jumps, the vault and the throws and would contribute greatly to the sprints and hurdles.

Although individual differences in speed, explosive power and strength outweigh minor differences in size, generally speaking decathletes of high calibre rarely measure below 180cm and successful heptathletes are not often under 165cm. The Shot Put, Discus, Pole Vault, High Jump and Hurdles are all events where performances, while not dictated by the performer's size, are facilitated by it.

The successful combined event competitor must also be durable, both mentally and physically. Not surprisingly, the most successful combined event competitors (and athletes in general) are the ones able to spend the most time training. To an extent, tendons and ligaments thicken and toughen over time muscles strengthen etc., but certainly the athletes who remain injury free, who are not «injury prone» especially in their early careers (in the U.S. this means the 17-20 age bracket for combined events) where a high volume of technical training is needed, have the highest chance for later success. Ideally the athlete will need to spend less time on technique as he or she masters the events and more time developing his or her speed, explosive power, strength and endurance.

Often overlooked, along with physical durability, is an athlete's mental toughness, both his or her ability to persevere through the ups and downs of so many training sessions and the ability to concentrate and
What qualities would you look for in a prospective combined event (Decathlon/Heptathlon) athlete?

Focus on the specific task at hand in the face of extreme fatigue (in competitions and sometimes in practice). The will to excel, subsumed under mental toughness, doubtless plays a large part in combined event success. Add to these the capacity to accept criticism, the patience to await quantitative and qualitative improvement, and the ability to learn (both motor educability and the mental ability to grasp the biomechanical concepts of the various events) and you have the major qualities for combined event success.

MACWILLIAM/HIGGINS/SANDERSON

Finding athletes who are of an «appropriate» size for the event Decathlon - 1.85 + m/85 kg; Heptathlon - 1.70 + m/60 kg is important as size and lever length will define the limits of performance potential.

Mental and emotional qualities must be considered - dedication to the sport and the event; patience to work hard for a long period of time; competitive drive to maximize the athlete's physical potential; toughness to work through pain and fatigue and to persevere to achieve the goals.

General athleticism as seen by a varied and successful athletic background including: sprint (jumping ability), speed, explosive strength, coordination, mobility and consistency together with the ability to learn and retain skills. Basketball and Volleyball are good sports to scout for prospective combined event athletes.

What factors or principles are most important in designing a training plan for combined event athletes?

ALFORD

Although the principles of «periodization» apply to all training, for all events and all sports, they must be geared to the needs of the individual at any particular time. This is especially true of combined event training and will involve a careful study of the scoring tables in connection with the athlete's performance profile, so that those events can be isolated, in which even a little improvement will bring about an appreciably increased points score.
What factors or principles are most important in designing a training plan for combined event athletes?

DICK
- Time available
- Facilities
- Personal discipline
- Spreading of loads through the microcycle

GAMBETTA/ODGERS
The training age of the athlete should receive primary consideration. This will be a major factor in determining the volume and intensity of training as well as the number of combined event competitions.

The performance factory - by that we mean the level of achievement on the scoring table based on point production in individual events for the younger athlete and the balance between event groups for the mature athlete.

Sociocultural factors - Can training be full time or is it something the athlete can only devote limited time to?

Weather and facilities will dictate the design of the annual plan both in regards to training and competition.

Progression - The progression in training should be basic conditioning to basic skill and the proceed to advanced conditioning which in turn progresses to advanced skill.

Optimum combination of events - Determine the optimum combination of events in training based on the individual athlete's strengths and weaknesses. This combination can, and in all probability will, change as the athlete progresses through his or her career. This combination may have no resemblance to the actual competition order of events.

Modeling and competition simulation are very important early in the athlete's career.

In the beginning stages of development, the emphasis should be on speed development, Long Jump, the Hurdles and the Pole Vault. The key here is to establish a sound technical model that will not fail the athlete during the latter stages of development.

The number of competitions is another key area. A full Decathlon or Heptathlon is often not necessary during the developmental stages. A quadrathlon or triathlon with the events carefully chosen can serve the athlete just as well.
What factors or principles are most important in designing a training plan for combined event athletes?

Lopez/Mondschein

Individualization of training is probably the single most important factor to consider in combined event training. Typically in the USA, athletes will come to the combined events during their first year of university competition with a strong background in one or two events. One works on event area weaknesses firstly, looking towards a general technical proficiency in all seven or ten events eventually. Thus the «jumper-runner-thrower» or «runner-jumper-thrower» combination types need to strengthen their weakest links. Studying the scoring tables and using common sense provides the basic guidelines for distribution of training effort.

Specificity of training is another important principle. On the university and regional levels, the combined event athlete with a limited amount of time to train needs to obtain proficiency in events such as the Pole Vault; therefore actual vaulting and vault drills constitute a more efficient use of training time as opposed to work on the high bar, rings, trampoline, etc. All of this presupposes a proper period of general physical preparation followed by a phase of specific physical preparation involving the use of medicine ball and other imitative exercises, weight training, and various running and bounding drills. Heavy weight lifting and plyometric training should be implemented with great caution for the combined event athlete in the early stages of his or her career. The training time lost due to shin splints, tendinitis, condromalacia patella and general exhaustion can set technique acquisition months and sometimes years behind schedule. The collegiate system in our country, with its emphasis on quick development and short term success is responsible for our nation’s lack of international success. There are many athletes who fail, early on, to grasp technical knowledge of one or more complicated events, who in fact never learn these events. Our collegiate system is filled with some tremendous physical specimens whose Achilles heel becomes the Pole Vault or the Discus or Javelin, due in part to early neglect of these events, or improper supervision during the crucial learning phases of said events.
What factors or principles are most important in designing a training plan for combined event athletes?

MACWILLIAM/HIGGINS/SANDERSON

After analysis of the athlete's strengths and weaknesses relative to the requirements of the elements (i.e., the individual events within the Combined Events), the initial plan should provide a programme which reduces the athlete's weaknesses while maintaining his/her strengths. To be truly world class, the athlete can afford no weaknesses.

A thorough understanding of the principles of training and of the relationship of one element to another within the combined events is a must. Much of the physiological work is identical and preparation for one element is preparation for another. For example, in the Heptathlon, the Hurdles and Long Jump are key elements. Preparation for them is basic to 200m and 800m training. Success in both events is based on the ability to run well.

The programme must be long term aimed at the development over several years. Attention to technical detail, especially at the fundamental/conceptual level, is critical for on this foundation the future is based.

Each year the programme must have specific annual goals and be based on building on the previous year's training. The long term development over an 8 to 12 year period should be the main aim.

Is there any event which should be emphasised? Why?

ALFORD

Again, it depends on the individual, but sprint training should never be neglected, as «speed» is the vital quality. Hurdling provides an excellent basis for many events - it will enhance leg speed and strength, joint mobility, a balanced running action and an aggressive, positive attitude.

DICK

Sprints - because sprinting is the core of these events and Hurdles - hurdles conditioning and coordination have great general coordination.

GAMBETTA/ODGERS

The Long Jump because of its relationship and transfer to the other events. The hurdles are the key running event for those who are naturally gifted with
Is there any event which should be emphasised? Why?

100m speed, defined as those able to run 10.80 or better.

The Pole Vault because of its high point contribution.

The Javelin because the training has a very positive transfer to the other events due to the high power combination.

LOPEZ/MONDSCHEIN

It is understood that individual athletes will have differing strengths, weaknesses and needs, but given a hypothetical blank salate, the first three events of the second day of the Decathlon competition, the Hurdles, Discus and Pole Vault, would bear special emphasis. Each of the three requires a great deal of technical training time. Besides being events where an insufficient technique can lead to mental blocks for the athlete, the Pole Vault and Discus are events in which the range of performances have greater variance than the speed, size and strength of the performer would indicate. 10 metres in the Discus (45m to 35m worth approximately 200 points) and one metre in the Pole Vault (275 points difference between 4.5m to 3.5m) are performances easily accounted for by the same athlete.

Looking at a worst-case scenario, the Pole Vault merits emphasis for the mere reason that the greatest harm can come to the unskilled vaulter. The shot may go 12 metres or 10 metres with a corresponding drop in points, but a vaulter who has trouble making the pit is placing himself in imminent danger. The Hurdles, as does the Pole Vault, rewards the proficient technician while punishing and even injuring the unskilled athlete.

The Discus is a key event in that it leads the novice thrower to an understanding of the principles of all throws, one learns conservation of rotary momentum, separation of the upper and lower body, summation of forces, transference of momentum, all in a short amount of time. Flaws are magnified in the discus circle, just as mastery of the event is rewarded. Furthermore, the athlete learns the rhythm of the throws from practicing the discus, he «hears» what the throw sounds like, just as the athlete learns to hear his or her acceleration pattern in the run-up of the jumping events.
Is there any event which should be emphasised? Why?

MACWILLIAM/HIGGINS/SANDERSON

General all-round development is vital to success in both Heptathlon and Decathlon.

In the Heptathlon, the Hurdles and Long Jump are critical elements. One should keep in mind as well that the 1985 Scoring Tables yield more points per centimetre at 1.90m in the High Jump than the 1971 Tables provided.

The Pole Vault is a critical element in the Decathlon. There is much to be gained and far too much to lose by inconsistency or poor technique in this element. The decathlete must also be a proficient hurdler.

Speed (100m times) as opposed to the ability to run well should not be over-emphasized in training. Many decathletes who are able to long jump over 7.30m and to run 110m Hurdles in under 14.70 sec., cannot break 11.00 sec. for the 100m.

Training time spent on the development of skill and on conditioning for the 400m and 1500m will return more points to the decathlete than an equal amount of time spent on speed training.

ALFORD

The only event that will benefit directly to any great degree is the 1500m (400m slightly). But there is some indirect value in that an improvement in general endurance will help the athlete to withstand the stresses of long and frequent training sessions. Fairly long (up to 5000m) steady runs will not harm the athlete’s speed capacity, as long as they are without strain (external pressure) and will gradually and naturally bring about improvements in cardiovascular efficiency and muscular «resistance» in the legs. This may best be utilised as part of the warm up. I am always suspicious of «percentages» but roughly this type of running might form about 5% of the work during the preparatory period and 2% in the competitive period.

DICK

Percentage of training load has no meaning. Aerobic toning has general value for regeneration and specific value for 400/800/1500m. Also, it has value for recovery between the events over the two days.
Is there any value to the combined event athlete from aerobic running? If so, what is it and what percentage of the training load should be devoted to it during the various periods of preparation and competition?

**GAMBETTA/ODGERS**

Yes, early in the training year and as a means of recovery from more intense training, especially training of high neuromuscular demand and training that involves high lactate tolerance work or highly intensive speed work. During the competition phase it should be used primarily as a means of recovery.

**LOPEZ/MONDSCHEIN**

The action of the Decathlon and Heptathlon takes place in under eight and six minutes respectively, and all events but the 1500 and 800 are speed or explosive oriented, thus no great emphasis should be placed on aerobic running outside of the general preparation period, and even then, anything over 30% of the running training would seem high. In the precompetitive phase, fartlek runs, continuous runs of up to 20 minutes and extensive runs become less frequent, although they are useful for variety. The most useful aerobic running during the pre-competitive phase would be what Gambetta and Winker refer to as «aerobic power» training (runs greater than 100 metres with 30-90 seconds recovery between reps and 2-3 minutes between them).

As it is difficult to accurately quantify the total training for the combined events, it would be safe to say that less than 10% of running training in the competitive phase would be strictly aerobic in nature.

**MACWILLIAM/HIGGINS/SANDERSON**

Yes, there is a value to aerobic running for the combined events athlete. It helps prepare the athlete. It helps prepare the athlete for the lengthy and intense training sessions required for the combined events and provides some background for the 800/1500m.

The general conditioning aspect of aerobic running should be stressed when laying the base in Phase I each year (six to eight weeks in the autumn). It then has minor emphasis during the remainder of the year. During the autumn, some aerobic running should be specifically included each day as well as coming through circuit training, etc., plus one long run each week.
Is there any value to the combined event athlete from aerobic running? If so, what is it and what percentage of the training load should be devoted to it during the various periods of preparation and competition?

How would you prepare a combined event athlete for the 800/1500m?

Aerobic conditioning is maintained during the late preparation and competitive phase by tempo running and recovery; specific pace running; Special Endurance runs; with additional volume in warm-ups and warm-downs and through pool (aquatic or hydrokinetic) training.

The percentage depends on the specific strengths and weakness of the individual athlete.

ALFORD

The over-distance work would be part of the warm up, except during the very early preparatory period when it could play a major role. Otherwise, I would rely on repetition runs (more often on good grass, including hill work) at various distance (60, 120, 150, 200), interval runs, some «pace» runs at 400-800 for men and 200-400 for women.

DICK

1. Emphasis on doing repetition runs over 100, 200, 300 - as opposed to long runs.
2. Time trials over 600m-1000m
3. All fitted into a total integrated programme to cover all events.

GAMBETTA/ODGERS

It depends on how you conceptualize the event. We feel that the 800m should be approached as an extended 400m run. The 1500m should be approached as an extended 800m run. A large amount of specific preparation work for the 1500m is counter-productive and contradictory to the training for the other events. Preparation should consist of time trials and test efforts at various distances to work on mental toughness and race distribution. The work capacity base will take care of the general preparation and the aerobic capacity will come from the volume of tempo work.

LOPEZ/MONDSCHEIN

The combined events athlete counts on a large amount of carry-over value from 400m training (mixed anaerobic/aerobic), from the small amount of aerobic running done in the training year, and
How would you prepare a combined event athlete for the 800/1500m?

from race pace runs of 600 to 1200 metres, emphasizing even splits (which to the athlete will feel like negative splits). Much of the 1500m work for decathletes will train them to push through the discomfort early in the race, while maintaining pace. As fatigue settles in, the athlete needs to get a feel for cycling down, working on turnover while shortening stride length. Workouts such as 5 x 400 metres at race pace with one minute recovery prepare the athlete for the 1500.

Since one is faced with diminishing returns (i.e. the loss of explosive power) when too much emphasis is placed on 1500 metre training, the athlete is left, to great extent, to fend for himself in that event.

MACWILLIAM/HIGGINS/SANDERSON

The 800m is very anaerobic. Special Endurance and Speed Endurance training are important in preparation for this element. For the heptathlete, much of the preparation for the 800m comes through the work done for the Long Jump (many, many approach runs) and Speed Endurance work for the Hurdles (over 10-12 Hurdles).

The 1500m requires more aerobic preparation. Emphasis on this type of training must be balanced with the time and energy requirements vis a vis the demands of preparation for the other elements of the Decathlon.

Generally, for both the Decathlon and Heptathlon, Phase I (early preparation) work would include:
- one to two minute runs at a Heart Rate of 170 with short recovery once a week
- Hill running once a week building to two times a week
- pool training
- 20-40 minutes steady pace runs, once or twice a week

Phase II (late preparation) and Phase III (early competitive) training would include:
- hills once a week until the competitive season
- short recovery (Heart Rate 120 to 130) repetition runs.

- Special Endurance sessions once a week.

For the heptathlete, begin early with 200m to 400m repeats at slower than race pace, then working, toward race pace, first at 200m, then 300m, then
How would you prepare a combined event athlete for the 800/1500m?

400m, 500m, and finally at 600m, aiming at $3 \times 600m$ at race place 8 days prior to the important competition.

For the decathlete, begin with 300m repeats working at progressive faster tempo with progressively longer recovery over the season. Pace trials over 800m, then 1000m, then 1200m at 1500m race pace.

For both the Decathlon and Heptathlon continue tempo work; pool training and additional volume of aerobic runs in the warm-up and warm-down until just prior to the high level competitive phase (Phase IV).

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**BIOGRAPHIES**

**Julie Dennis**

Julie Dennis (GBR) has been newly appointed Executive Editorial Board Assistant.

Born in Beckenham, Kent (Great Britain) on 9th December 1956.

Until 1984 employed by the British Council, which included 3 years working in China, dealing with student, educational and cultural matters.

In 1984 joined the British Amateur Athletic Board (B.A.A.B.) as Coaching Administrator and in addition to this in 1987 also became B.A.A.B Office Manager.

Editor, Athletics Coach since 1984.

Senior B.A.A.B. Coach, specializing in High Jump.