

## Chapter One: Introduction

*“Praestabilus esse nonnunquam unicum habere consilium, id sit verum et efficax.” Erasmus 1551*

The past sixty years have seen an explosion of interest in sport around the world. This has been accompanied by an enormous increase in efforts to improve sporting performance as individuals and teams try to find an edge over their opponents. Science and technology now impact on sport in myriad ways; indeed in some sports the depth of analysis borders on the ridiculous, especially given the more pressing problems this planet faces.



**Figure 1.1** Yelena Isinbayeva

It is therefore surprising to find that in the pole vault, perhaps the most complex of all the disciplines of track and field, many coaches still base their methods on myths and misunderstandings which have their roots in the pioneering phase of fibreglass vaulting. In the information age this is almost inexcusable. Almost but not quite! The fact is that the vast majority of coaches have little time for study or reflection; they are too busy getting on with the tasks of teaching, coaching and living. This can lead them into the trap of simply watching video film, CD's or DVD's in search of the holy grail. The problem here is that unless they have a sound conceptual model of the event, these video images are likely to provide more entertainment than education.

One of the objectives of this text therefore is to provide a definitive statement of modern technique. This is a challenging task because many coaches believe that “There are many ways to skin a

cat”. In other words they feel there really is no single best way to pole vault and that an athlete's technique depends almost entirely on their physical qualities. This is a difficult argument to counter, especially when the coach concerned is highly experienced and their athletes are achieving good results. However we believe that some coaches take this position because they do not have a clear conceptual model of modern technique in the pole vault while others may be confusing the notion of style with a technical model.

Another factor can best be described as short termism. This is common in the USA where coaches typically have four years or less to work with their athletes in a society which only understands winning. As a result, coaches often trade long term development for short term gain. One obvious example of this is a tendency to have young vaulters gripping too high. This may produce a regional or state high school title but may prevent a young athlete from ever reaching their full potential. Another symptom of short termism is when coaches paper over major technical weaknesses in order to achieve a better result at the conference or national championships. They deal only with the symptom instead of the cause of a problem and so limit their athlete's ultimate performance. Unfortunately instead of admitting this, some coaches hide behind the myth mentioned above.

Here it might be worth noting the words of Erasmus quoted in Latin above. In 1551, when considering the strategies of the fox and the hedgehog to get out of danger, he observed, *“Perhaps it is better to have one way of wisdom provided that it be true.”*

Part of the problem is that many coaches do not



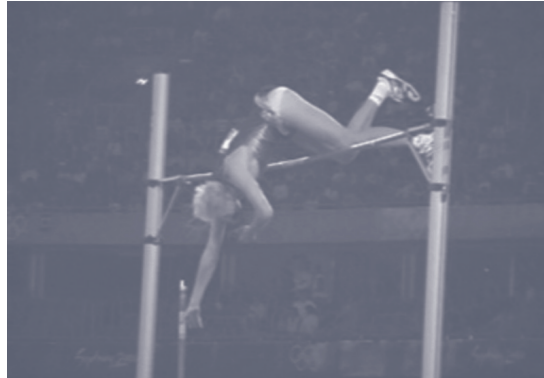
**Figure 1.2** Anzela Balakhonova

appreciate the difference between a technical model and an athletes style. Every vaulter does have a distinctive individual style which is largely determined by their unique physical qualities and previous movement experiences. One obvious example is that athletes with a gymnastic background will usually be much neater and tighter on the pole during the inversion phase; good examples of this are Yelena Isinbayeva, and Anzela Balakhonova. However in both cases their style overlays a sound technical model, which in turn is based on the principles of biomechanics, about which there should be no debate!

We believe that the coaches of the former Soviet Union developed the first coherent biomechanical solution to the challenge of vaulting with a flexible pole. The head pole vault coach of that system, Vitali Petrov, outlined all of the key elements of this advanced technical model in the presentation he gave at the European coaches conference in Birmingham, England in 1985. Perhaps because of the problems inherent in a situation where complex concepts were passed through the filter of translation from Russian to English, many of the pearls in his presentation went unnoticed or were misunderstood. Indeed even now, more than twenty years later, many of his ideas are still not accepted or even understood. In part this has been because the revolutionary ideas he put forward appear to have challenged almost everything the vast majority of coaches believed about effective pole vaulting, so it is perhaps understandable that his ideas were not immediately taken up and widely applied.

Another factor may be that the apparently revolutionary approach to pole vaulting he presented, leapt ahead of the understanding of most, if not all, sports scientists. We have included a transcript of Vitali's presentation as Appendix A, because it is still worth a detailed study by any serious vault coach.

What is surprising is that more than twenty years on, many vault coaches around the world have either not heard of the Petrov/Bubka model, or what is even more amazing, have rejected it! As a result it is still not widely understood nor accepted by all coaches. There are several reasons for this. Among the most powerful are xenophobia and egotism, both of which can prevent otherwise intelligent and professional individuals from taking up new ideas. We are all products of our own experience



**Figure 1.3** Maxim Tarasov

and it is usually the most powerful force in our belief system. Over 150 years ago the German philosopher/writer Goethe observed that when a person subscribed to a particular school of thought, their adherence to those beliefs blinded them to accurate observations. It seemed to him that the more one knew, the less they were able to see.

In fairness it must be pointed out that it was only through serendipity that coaches in Adelaide had the opportunity to learn more about this advanced technical model at an early stage. This occurred during the World Cup track and field competition which was held in Canberra, Australia in 1986 when Petrov explained his ideas in great detail with copious hand drawn diagrams – which Alan stupidly did not retain! This experience encouraged us to really study what he was saying and to try to apply his ideas with young athletes. This was an important step because, like many other coaches, we initially believed that Bubka's performances could be attributed to his unique physical qualities along with his steely determination to be the best.

There is no doubt that there has been a widespread



**Figure 1.4** Dimitri Markov

tendency to view Bubka as unique, a one of a kind, who achieved superb performances simply because of his special physical qualities. As a result many saw Bubka's style - but did not see the Petrov technical model which underpinned that style. However it is becoming increasingly difficult for anyone, no matter how obtuse, to ignore reality. From 1983 through to 2003, the Men's World Championship was dominated by athletes who exploited this model. Bubka's sixth and final World Championship win in Athens in 1997 was followed by Maxim Tarasov in 1999, Dimitri Markov in 2001, and Giusseppe Gibilisco in 2003.

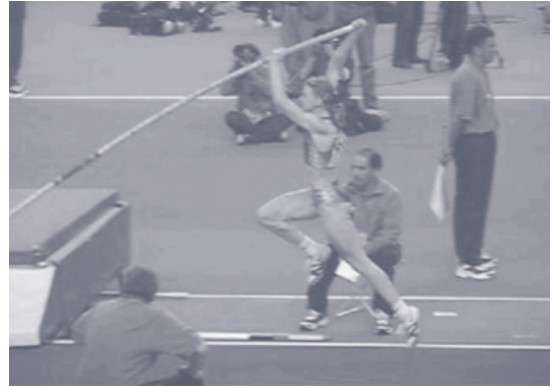


**Figure 1.5** Giusseppe Gibilisco

It is also worth noting that Svetlana Feofanova, Yelena Isinbayeva and Monica Pyrek, who have been pushing each other to new heights in the past few years, all try to use this technical model. Indeed in early 2006 Yelena moved to train with Vitali in Formia.

We believe that the rapid improvement in performances since the formal introduction of the pole vault for women can be attributed to the fact that many of them immediately began to use this technical model. In this way they bypassed the baggage of mythology which continues to have a negative impact on many levels of male pole vaulting.

Without wishing to denigrate the performance of any athlete, we believe that many have underachieved because of their reluctance to seriously consider the Soviet technical model. This is especially the case in the USA. It would seem that many coaches there would prefer to promote their own unique methods than become Petrov disciples. Given that the U.S.A. has enjoyed considerable success at World and Olympic Games in recent times this may appear to be a challenging



**Figure 1.6** Svetlana Feofanova

statement. However it should not be forgotten that the United States had dominated the event almost from its inception until the arrival of the Petrov driven flow of athletes from the Soviet Block countries. Countries like France have also been guilty of ignoring the new methods while even in Germany, a country where there was a national policy to adopt the Petrov/Bubka approach, some coaches still do not base their methods on it.

However the future looks promising because feedback derived from U.S. pole vault websites, along with wide ranging personal communication with many coaches in that country, suggests that the pace of change is accelerating. In fact it is clear that both Brad Walker and Jennifer Stuczinski have been influenced by the Petrov model.

In Australia, with a very small number of vault coaches who see each other on a regular basis, Petrov's ideas were rapidly taken up and applied. Unfortunately a small population base, an inferior infrastructure and limited opportunities for competition means that knowledge has not always been translated into performance. That said, Australia,



**Figure 1.7** Nick Hysong

with a population of a little over twenty million, and with relatively few pole vaulters, punches well above its weight in this event. Emma George became the first woman to clear 15 feet in 1999. Tatiana Grigorieva won medals at 1999 World Championships, the 2000 Olympic Games and the 2002 Commonwealth Games, while Dimitri Markov won the 2001 World Championship with a clearance of 6.05 metres, the second best performance in the history of the event. In addition we have seen the emergence of Paul Burgess and Steve Hooker as world class athletes, while it seems likely that the Parnov sisters will have a major impact on the women's vault for some years to come.

Perhaps the last word on the issue of technique in the pole vault should go to Bubka, who even in retirement is committed to improving standards in the event. In response to a question from Alan at the 2002 European Championships in Munich, Sergey indicated that he was completely mystified by the unwillingness of many coaches and athletes to adopt Petrov's ideas. He was adamant that it was his technique that was responsible for his success and not his physical parameters, excellent though those were. He believed that many of the athletes competing that day, along with many, many more in the USA, had physical abilities equal or superior to his own and he was certain that the reason these vaulters were not jumping higher was because of the limitations their technique imposed!

His views were totally vindicated the following year when Gibilisco jumped a personal best of 5.90 metres (19'4 1/2") to win the 2003 World Championships. Two points should be made. First, to date, no one has suggested that Giuseppe achieved this result because of exceptional physical ability. Secondly, he had been coached for the previous seven years by Vitali Petrov!

Here it might be worth adding that although Bubka's official World Record of 6.14 metres (20'1 3/4") has stood since 1994, it is clear that but for two factors he could have achieved much better performances. The lure of US \$50,000 for every world record encouraged him to improve it by only one centimetre at a time; this clearly slowed his progress. Indeed he once famously rejected an offer of US\$160,000 from a French meet promoter to break the record by two centimeters - less than one inch!

Then at the point where financial independence would have allowed him to find out what his potential really was, injury prevented him from

taking the world record to a level where it might never have been approached. This is not merely hypothetical. Many of his forty plus 6.00metre (19'8 1/4") jumps would have cleared much higher bars and as long ago as 1986 Petrov affirmed that Bubka was clearing 6.20 metres (20'4") regularly in training. Then in 1996 Alan was one of a number of onlookers to see him clear a soft bar set at 6.30 metres (20'8") on the warm up track in Atlanta. Sadly we also saw him walk over and immerse his foot in a bucket of ice water immediately after that jump in an attempt to control the pain of a damaged Achilles tendon, an injury that prevented him from competing at the Games.

However the final evidence is even more convincing and dramatic. The bar cam view of his winning clearance of 6.01 metres/19'8 3/4" at the 1997 Athens World Championships, Figure 1.8, shows what may well be the highest jump in history. When Alan raised the matter at the Jamaica clinic in 2002, Bubka, with a smile broadening his face, responded that Japanese sports scientists had calculated that on this particular jump he would have cleared 6.40 metres (21')! He also said that two other vaults in that series would have cleared 6.34 metres (20'9 3/4") and 6.32 metres (20'8 3/4") respectively.

The thesis of this book therefore is that the Petrov/Bubka technical model should provide the basis for teaching and coaching the pole vault at every level of performance.



**Figure 1.8** Bubka at Athens World Championships

*Readers should note that the quote at the beginning of this introduction was deliberately chosen to suggest that wisdom can come from anywhere, any time and in any language.*