The Principles of Training

These principles provide a sound basis for the construction of any kind of training programme. Any programme failing to operate on them is limited in value. It is one thing to believe that one is trying hard and quite another to have a sustained programme which can be checked and by which one knows one is training hard. The ability to sustain effective training will be greater if the programme is based on these principles. They may involve common-sense and may have already been mentioned, but, even so, we consider them to be necessary prerequisites to the specific training suggested in Part Three.

The principle of generality

Training for most sports requires a good level of cardiovascular and respiratory efficiency. This means that the heart, lungs and bloodstream have to work well. The reason for this is that much of the fuel required by the working muscles comes from the bloodstream and if this is not operating smoothly then the whole system will not be sufficiently adaptable to allow further improvement. This system sets the limit for further training and thus needs to be developed as soon and as completely as possible.

The principle of specificity

Many players who consider themselves fit for badminton might be surprised when they go swimming on holiday and find themselves out of breath after a short swim. This example serves to illustrate that training for one sport does not necessarily mean fitness for another as any training is sport-specific. The implication for badminton is that the player and coach must analyse the demands of the sport and train accordingly. The sort of work appropriate for on-court training is explained in detail in Chapter 9.

The principle of individual specificity

The concern here is with the fact that each player is an individual in terms of his playing style and his initial level of fitness. Consequently different individuals will adopt different training programmes to cater for their different needs.
Some players rely on a power game and adopt a dynamic attacking style of play. Others are content to keep the rally going and play a patient sort of game to try to tire the opponent or outmanoeuvre him. Different training methods can be used to strengthen a specific style of play or to develop others and so extend the technical/tactical repertoire of the player.

An example of this was seen in the 1977 World Championships in Sweden when Ray Stevens (England) played Fleming Delfs (Denmark). Stevens had practised a certain move continually under pressure in training. This involved a lunge jump in the forecourt to hit a backhand winner from the net. Analysis of Delfs' play had shown that after his smash to the backhand he came into the forecourt for the block return and played a forehand spinner to the net. The training paid dividends and Stevens was able to use his skill effectively to hit backhand winners in that situation. Although this was a tactical ploy, it could not have been achieved if Stevens had not developed the fitness to play a controlled return to the smash and the ability to move consistently forward and explode into the net.

The level of fitness aimed at is another aspect of individual specificity and is an important feature of this book. The work demands of an inflexible training programme may be just right for some and too easy for others. This is why the activities suggested later can be adapted to the fitness levels of each player.

The principle of overload

There is no magic pill to make training easy. Training of necessity has to be demanding before it will be of any benefit. In general, training for badminton by playing badminton may maintain a given level of fitness but will not improve it. This is because the body is not being sufficiently over-loaded. Thus we have to push the body to levels of work intensity which are greater than in the actual game situation.

There are some useful methods of overloading the body in playing conditions. These involve conditioning the game in some way or playing ‘two versus one’ games. They will be discussed in Chapter 9. If badminton is played at a leisurely, recreational level with no great work demand, then the extent of the overload need not be very great to increase fitness. However, those players who take their game seriously need to engage in training activities which regularly overload the system at a higher level. This will produce a much more marked training effect.
The principle of adaptation

One of the unique characteristics of the human body compared with any machine is its ability to adapt to work in a manner which improves its performance. Machines, often through misuse or ageing, adapt to decrease performance. Work, particularly of an overload nature, forces adaptation to increase performance. All good training is designed to cause this adaptation. Consequently, the intensity and duration of any training programme must be such that performance is regularly adjusted in an upward direction. The result is that the body should be able to tolerate a further increase in work load and a further adaptation should occur.

It must be remembered that no two individuals will adapt at the same rate. They have different physical and physiological constitutions and thus tolerate training in different ways. This is another reason why it is necessary to design programmes specifically for the individual. Adaptation also varies according to the initial level of fitness. A very unfit person will adapt rapidly and achieve quick changes in performance. As he gets progressively fitter he must recognize that the adaptation process will be slower. Knowledge of this fact can be a source of encouragement for an athlete in the early stages of training and should help to prevent disappointment later when he does not improve at the same rate.

The principle of progression

Many players start their training from a low level of fitness and may be over-enthusiastic in the early stages. This over-enthusiasm usually leads to an excess of training and results in the painful feelings associated with fatigue which makes them reluctant to continue training. In addition, intense work too soon contravenes the principle of generality and can cause injuries. To avoid harmful effects any athlete is advised to build up the level of work intensity over a period of time. It is not possible to be specific about the length of time it takes to progress to new fitness levels. However, it is far better to progress through increasing levels of fitness over several weeks or months than to make an error of judgement and find that it is not possible to tolerate the work intensity.

The fitness levels that can be achieved by progressive training can be quite remarkable. The earlier that one starts to train for a given competition or tournament the more time will be available to progress to the required standard.

The principle of reversibility

This is, in essence, the opposite to adaptation. It is a reminder that not only can
improvement in fitness not be maintained if training stops but that the athlete will drop below his current level of fitness. The player who has had a leg immobilized in a plaster cast after a knee operation will have experienced the extent of muscle wastage that can occur in such a short time. This example, though a dramatic illustration, emphasizes that reversibility will occur during any period when training is prevented.

For these reasons it is important to maintain some degree of training even though injury may prevent full activity. An injury to the lower leg, for example, should not prevent training of the upper body. A number of specific exercises helped by some imagination and inventiveness should make it possible to continue to train for endurance fitness despite such injury.

Reversibility is most likely to occur when the main season is over. This is the time when participation in other forms of recreational activity is a sound investment to safeguard against loss of fitness.

The principle of measurement

Measurement is necessary to check progress and so make possible an accurate evaluation of the training programme. On the basis of the evaluation the programme can be modified as required. Charting progress can be an interesting feature of the training and is of much value in that evidence of improvement can provide the motivation necessary to enable the athlete to persist and work harder in training. This principle and appropriate methods of measurement were explained in greater detail in Chapter 4.

The principle of competition

Badminton is a competitive game and consequently the performance of the athlete is ultimately assessed within a competitive situation. Competition is a factor which motivates the athlete to improve his performance. It is important to maintain the emphasis on competition in all areas of the athlete's work if he is to be motivated to extend the limits of his performance. The athlete who has developed his ability to extend and maintain a high level of performance in his training should continue to remain highly competitive at all times in match play. For these reasons the competitive element should be brought into the training programme. In training the athlete can compete against: the clock, a personal target, resistance, another player.
The principle of variety

Much training lacks excitement and is often tedious. One way to prevent this is to vary the approach, the activity, the intensity and the duration of the training programme. This is why a variety of activities have been included in Part Three even for those training aspects which are quite specific in nature. A training programme which is interesting and attractive is more conducive to hard work and thus more likely to achieve good results.

SUMMARY

At this stage a brief summary of the theory should make it easier to follow and make use of the remainder of the book. In Part One we explained that the evaluation of the work demands of the game were determined by the nature of the game, i.e. the type of activity revealed in playing the game. Once we knew the sort of work performed by the player it would become possible to examine the effects on the body and thus train the body to work with greater efficiency. Various methods of evaluating the work demands of the game were used and on the basis of the findings the requirements of the players were considered. The simple conclusion was that the player must be fit for the work. Consequently, in Part Two our enquiry looked at the nature of fitness and gave an explanation of the components involved. As fitness is improved by training then eventually a specific training programme would have to be planned. The success of any programme is measured by the results it achieves and in this case the training should result in a fitter player. As improvement can only be assessed from some starting point it follows that some method of measuring fitness prior to training is necessary. Chapter 4 suggested some methods of testing and measuring the fitness components.
The necessity of a fitness training programme led to the examination of training theory for, though it is important to know what to train, it is even more important to know how to train the body. The study focused on the physiological basis of training with a detailed discussion of how the body functions when undergoing work of varying intensity. On the basis of this knowledge it became possible to formulate a number of principles of training which underpin the construction of any training programme. Figure 6.1 illustrates these relationships.