

Physical Conditioning and Preparation of Shooters for the Competition Season

In most sports there are four recognised periods of the training programme —

- (1) the "foundation" or base period.
- (2) the form-gaining or getting into form period.
- (3) the keeping in form or competition period.
- (4) the tapering off period.

These periods are recognised by all top shooting Nations and their training programmes and whole competition calendar is based and built on them. Though our circumstances are somewhat different, and our State and National Organisations have not yet recognised the importance of this, there is no reason why — at least — we should not know about it.

hour. I think one needs a great amount of luck too, but luck only, does not make Champions. One of the things that makes these winners to be able to achieve this is the knowledge about the physiology of shooting, the knowledge of how to plan and time a training programme. This knowledge comes from years of experience of the individual as well as the collective experience that had been collected by top shooters, trainers and coaches, and not least, the medical experts, some of whom specialise in Sports Medicine. It takes many years to gain enough knowledge on this subject and as I believe in its importance I think it is time for us to consider and discuss this aspect of Shooting. The things mentioned in this article

This article discusses many aspects of preparation of the body for competition, and should be of prime importance to those of our members who feel they could improve their physical condition. Any queries should be directed to TIBOR GONCZOL at 16 Brentani Avenue, Elsternwick, Vic.

In competitive shooting there are two things that are very difficult to achieve (regardless of score) and these are (1) to be able to do one's best — to shoot the highest score that one is capable of — **IN COMPETITION.**

(2) to be able to "time" ones form. In other words: to get into top form just at the right time.

Apart from the necessary high scoring potential, these are the most important characteristics that make Champions. In a World Championship or Olympic Match there are perhaps a dozen or twenty competitors with the scoring ability to win. But there is only one winner: the one who is able to hit his top form at the right time the right day, almost at the right

I learned from discussions with top shooters and coaches, from correspondence with top International shooters as well as some top local shooters, from my own experience and from my coach some years ago. I must admit that in the past few years I have not utilised much of the knowledge myself. I am going to do so in the future and hope that by writing this article I will interest others to think along these lines.

In the first article I will talk about the first two periods and the problems in regard to conditioning the shooter.

Overseas, the physical conditioning is done on club-level, in groups. When the groups are formed the physical conditions, the age etc. of

the shooters is considered so that the groups are of people of about the same physical condition. This is necessary to help the even and smooth development of the individuals in the group without the danger of excessive effort by some members, over-training etc that can stop and delay improvement and, in the case of the more vigorous exercises, cause injuries.

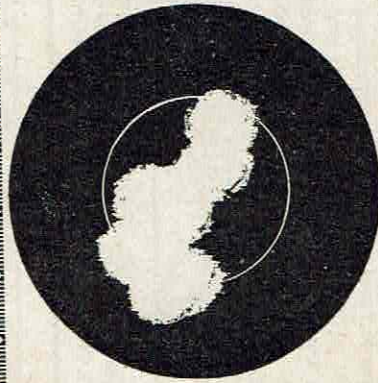
The programme is different for the younger shooters as their physical ability can be developed and needs to be developed to a higher degree in the same period of time as their body can take more strain than the older shooter's. Special care is taken to select some other sports for the groups as well for this can help and speed up the development. One should not be surprised to find that the greater part of the first training period is taken up by physical conditioning and exercises to the ratio of 2/3 part of physical and 1/3 part of shooting as the physical fitness and ability is considered very important and necessary for the reaching of

any high scores, and for shooting high scores consistently. The overseas competition programmes are pretty strenuous (I was told by some American members of their representative team, that they have as many as fifty major competitions a year) and involved is a lot of travelling and some hardships, yet they are expected not only to hold their form and consistent high scores, but to improve on them all the time. This cannot be done without proper physical preparation.

What are the physical characteristics that a shooter must possess in order to be able to improve his scores constantly?

- (1) Well developed muscles.
- (2) Good physical condition which also helps the work of the central nervous system.
- (3) Stamina and willpower.
- (4) Good capacity lungs and breathing apparatus.

Let us examine how this ability can be developed.



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Well developed muscles:

Some might ask: why does a shooter need well developed muscles? Well, for an example, in a free-pistol match the shooter must keep lifting his pistol (that might weigh three pounds) for almost three hours. Sometimes one lifts the pistol 3, 4, 5 or even more times before firing a shot. Not only lift it but hold it for 8, 10 seconds or more at the time and hold it steady, and motionless. This can tire a shooter physically which in itself would not be so bad, but unfortunately it always means nervous exhaustion as well, the diminishing ability to concentrate, and without this there are no high scores.

As in most other sports, shooting only uses certain muscles and taxes certain parts of the whole system more than others. Only certain parts of some muscle groups are used and with different intensity. The work of the muscles is mostly static. It is advisable to keep this in mind when selecting exercises and try to make sure that they —

- (1) occupy many groups of muscles.
- (2) Occupy them in different ways and intensity.
- (3) Use the antagonist muscles also.
- (4) after about 2 or 3 exercises or efforts do some breathing and loosening up exercises.

Good physical and nervous condition

When we talk about "good condition" I do not mean a fat person, though I have met fat World Champions. One can get into "good condition" by a sensible diet, good eating and sleeping habits, and exercise. A person in this condition is likely to have a well functioning nervous system and strengthening and conditioning the body will have the same effect on the nervous system as well.

Stamina and Willpower

Without these characteristics there are no high scores. It means that the shooter is capable of doing his best for an extended period.

without deterioration of his scores. (As is necessary for example in the Australian Championships, particularly if the shooter enters several events and even more so when one also shoots in the Selection Trials. But even in a smaller competition it is necessary to fight for a better score, better string). A shooter with stamina will recover quicker from the strain of traveling and this is an important factor for us here in this country because of the long distances we have to travel to some competitions. It also means quicker recovery from a competition, quicker regeneration of one's strength and concentrating ability. There is no doubt that a competitor with this characteristic has a great advantage.

Stamina can be developed with the help of sports or exercises that are based on repeated cycles such as swimming, running, bicycle-riding, rowing, walking etc.

When considering exercises to gain stamina, we have to differentiate between General and Special stamina.

The general stamina means the ability of the heart, circulatory and breathing system to do heavy work for an extended period without quick fatigue, and also the ability of them to recover quickly during and after such work, and the ability of the system to adapt itself to extra loads of work and keep supplying the various organs with oxygen-rich blood in adequate quantities.

Whatever physical activities we engage ourselves in, it will have a positive effect on our general stamina and condition. It is however advisable to select these sports and activities so that they use different muscles or in other words exercise our whole body and system. The above mentioned sports are not requiring much mental concentration and this can be an advantage after a day's work.

As one advances, the amount of exercises have to increase to a point. This may be done in two ways: (1) increase the amount of work

and the length of work; (2) Do the same work for the same length of time, but with increased intensity.

Ideally both methods should be used alternately. This increase in work however should be done very gradually as sudden load in work can be harmful, can cause injury or force the shooter to give up training for a period which of course should be avoided. These abilities must be obtained mainly in the first "basic" training period which normally lasts to 3, or 3½ months, at the beginning of the shooting season. After that, the amount of physical exercises decrease as the specialised shooting training increases, but it should not stop completely, it should form an important part of the training programme throughout the year. The shooter can do all these himself by working out a programme of his own, keeping the following points in mind:

- (1) Start all exercises with a "warming up".
- (2) The increase of work should be gradual.
- (3) Keep a record of development and if it is necessary, change the work-load plus or minus.
- (4) The work or exercises should not be one sided, but varied.

The obtaining of the special stamina simply means exercises that help the shooter to develop stamina that is necessary for shooting. To be able to hold up a pistol without movement for an extended period of time etc. etc.

One of the best ways to get this is with a lot of dry firing. Dryfire for extended periods, with full concentration. This will also help to develop the special shooting rhythm, shooting cadence that suits the individual. Special exercises can be done to strengthen the hand, arm, shoulder, back, etc. etc. Spring expanders, hand grips, rubber-balls, static exercises should be used.

There are many exercises one can devise for oneself without any expense. To give you an example, I will describe one: Get a broom-handle, cut it down to about 3 ft., then hammer a nail into it at about the half-way mark. Tie a string 5 ft. in length to the nail, and tie some weight to the other end of the string. The weight can be just a couple of pounds or so. Grab the stick at each end, extend your arms in front of you straight, holding the stick at shoulder width and shoulder level with the string hanging down between your hands and the weight on the other end resting on the ground. Start winding the string up on the stick until the weight touches the stick, then do not let it roll down, but wind it down. It sounds easy until you try it. This is a very good exercise, strengthen the arm, wrist, and uses a lot of the same muscles that you need for pistol shooting. Try it, use it and devise new ones if you like.

Continued in next issue

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