The sports achievement of any country greatly depends upon providing adequate training programmers and facilities to school children in various age groups. If we want to win any laurels in the international sports arena, we have to think seriously in terms of training programmers of our school children and youth. Besides providing the basic physical education programmers special programmers have to be provided to those who wish to take part in competitions and to win high distinctions. Such programmers can be provided by establishing well equipped sports school. The nations leading in sports such as U.S.S.R. is one of the most advanced country in sports at present. It has more than 4,600 children’s sports school which are attended by over 1.6 million children in the 9 – 14 years age group.\(^1\)

These schools altogether cover 23 sports disciplines including Track and Field, and Gymnastics. Members of the Soviet students club usually achieve top results at the Olympic Games too. Soviet sports experts have commented that mainly because of sports schools and the facilities available at universities, the soviet students have performed well at the university games and Olympics. The G.D.R. Bulgaria and other countries of socialist blocks are also following the same pattern.

The vast development of motor qualities is an asset to a sportsman for the athletic success. So all the motor qualities have to be developed to the fullest extent as early as possible. In 11 – 14 years of age group the motor
qualities can be developed very fast and then from 14 – 18 years these can be developed moderately and after 18 years of age the development of motor qualities will be comparatively slow. With the clear realization of the fact the experts in advanced countries thought of providing maximum facilities to school children for their physical developments for specialize programmers based on scientific techniques. Sports schools, therefore, are the places to carry out these programmers.  

“Catch them young” is an old saying in physical education but it has remained only a saying in many developing countries. If a country does not provide adequate physical education or sports programmers to the school children, that country will have no standing in sports. By ignoring our school children and youth, we cannot achieve much in the field of sports.

**Criteria – Criteria of a Sports School:**

The sports school most provide all the standards of equipment and facilities depending upon the needs of various age groups. When one deals with children it must be strictly according to the specification otherwise it may do much harm to the children. Doctor’s services are needed not only for treatment of diseases, injuries etc. but also for selection of candidates too. The candidates for admission must be examined by well-qualified specialists. Generally, the admission requirements are only good health and good academic grade in schools. If the selection is made for the 10 – 11 years of age groups, it must be purely on the basis of health. However, some of the candidates may be admitted conditionally and for 2 – 3 months trail lessons can be given under close observation before their admission is confirmed.
Training Programme:

Training classes must be conducted as regular practical lessons with all pedagogical principles depending upon the age group and physical preparation of students. Usually these classes last from 1 – 11 to 3 hours as represented in Table No. 1 besides these lessons (formal lessons hourwise) in groups, there are a number of other requirements like morning exercises and individual home work which may be given to each student by trainer of the respective group.  

Specially organized voluntary competitions for those who are specially in athletics should be conducted by laying emphasis on development of the following qualities: hard work, persistence, discipline and loyalty. Those qualities are most important for the future athletics. After gaining all-round physical development through hard work, the students may be grouped in various categories according to their age, sex and preparation. The functioning of the training group must entirely depend upon the plan and principles and upon the concerned sports schools. The training group, age, number of classes etc. are represented in Table No. 2.

Training Process:

In athletics (track and field) the training process is greatly dependent upon selection of many-sided exercises with emphasis on solving methodical and technical problems of popular events in athletics. For example, children of 10 – 12 years are supposed to know the fundamental technique of the most popular events in athletics. At this age they must start developing affection and preference for athletics.
In 13 – 15 years age groups students must continue with more advanced techniques of many events (Pentathlon and Decathlon). 16 – 18 years age group girls and boys must master technique.

Table – 2.1

Approximate distribution of time for Training depending upon age, preparation and period in Track and Field

<table>
<thead>
<tr>
<th>Parts of Orientation to Lesson Training</th>
<th>I</th>
<th>II</th>
<th>III</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Improvement of General Physical Preparation</td>
<td>Development of physical quality</td>
<td>Scientific training in T &amp; F technique</td>
</tr>
<tr>
<td>11 -13 Years</td>
<td>July – Aug</td>
<td>30</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Sept-Oct</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>Nov – Dec</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Jan - Mar</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>14 – 15 Years</td>
<td>July – Aug</td>
<td>25</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Sept-Oct</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Nov – Dec</td>
<td>15</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Jan - Mar</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>16 – 17 Years</td>
<td>July – Aug</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Sept-Oct</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Nov – Dec</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>Jan - Mar</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>17 – 18 Years</td>
<td>July – Aug</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>Sept-Oct</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>Nov – Dec</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>Jan - Mar</td>
<td>10</td>
<td>10</td>
</tr>
</tbody>
</table>
Table – 2.2

Various Teaching Groups in Sports School

<table>
<thead>
<tr>
<th>Various Teaching Groups</th>
<th>Age</th>
<th>No. of Students</th>
<th>Period</th>
<th>No. of Classes in a week</th>
<th>Continuation in hours</th>
<th>Max. No. of periods in a week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preliminary group</td>
<td>10-11</td>
<td>15-20</td>
<td>3 Months to 1 year</td>
<td>3</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>(beginners)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sub – Juniors</td>
<td>11-12</td>
<td>12-15</td>
<td>1 year</td>
<td>3</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Juniors</td>
<td>12-13</td>
<td>12-15</td>
<td>1 year</td>
<td>4</td>
<td>2-3</td>
<td>9</td>
</tr>
<tr>
<td>Sub – Seniors</td>
<td>14-16</td>
<td>10-12</td>
<td>Up to 2 years</td>
<td>4</td>
<td>2-3</td>
<td>11</td>
</tr>
<tr>
<td>Seniors</td>
<td>15-17</td>
<td>8-10</td>
<td>Up to 2 years</td>
<td>4</td>
<td>3</td>
<td>12</td>
</tr>
<tr>
<td>Youths</td>
<td>16-18</td>
<td>6-8</td>
<td>2-3 years</td>
<td>5</td>
<td>2.5-3</td>
<td>14</td>
</tr>
<tr>
<td>Qualified athletes</td>
<td>17-19</td>
<td>4-6</td>
<td>2-3 years</td>
<td>5</td>
<td>3-3</td>
<td>16</td>
</tr>
<tr>
<td>(state or national level)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Most of the athletic events before they select advanced and selected specialization of particular events.

In specialization of events with emphasis on development of all round physical qualities, specific quality as well as through knowledge of advanced techniques in particular events must also taken into consideration. When we think in terms of all-round physical development, a prospective plan must be involved for selected groups in the sports school. This must be verified by tests from time to time. A suggested prospective plan is shown in Table No. 3. It is entirely an anticipatory plan. Prospective long term training plan
can be made for the young sportsmen of 6-8 years. In this the main emphasis will be on all round development of physical qualities. In the prospective plan, training hours may be distributed weekly, monthly and year wise in every academic year. For the above plan a concrete graph must be made in advance indicating the exact training hours and duties. Every month an abstract of the monthly lessons must be prepared. A sports calendar indicating the dates of competitions must be well-planned. This must be prepared with the full cooperation of the other schools of the same pattern or in consultation with the central organization of sports schools. 4

An approximate number of competitions in a year according to various age groups for those who are taking part in athletics is represented in Table 4.

**Training Programme for Various Disciplines:**

The characteristics of each sport and game vary in many aspects. The relationship of exercise and planning must be established according to the characteristics of each game or sport. After the general training and preparation the boys and girls have to specialize in a particular sport or game. This is a very difficult job. Many times it is not done properly. Interest, domination of a particular physical quality. Aptitude, medico-biological aspect all these factors have to be taken into serious consideration. For the intelligent selection close observation as well as data of the previous general training programmed, characteristics of the developments of physical qualities etc. are to be taken into serious consideration.

The beginning of training period as well as the age for the competitions varies according to the characteristics of the game or sports. Here a few general characteristics of game and few sports are given but the
age for training as well as the age for starting competitions for most of the sports disciplines are represented in Table No. 5.

In most of the sports and games 13 – 14 years of age is considered as the correct time to take part in competitions. In this age the athletes approach the first stage of sexual maturity too. In this age they must make sensible selection of their specialization. Even though in certain sports disciplines they can do it earlier like swimming, figure skating etc. at 11 – 12 years. Certain other sports the question of specialization come much later (all types of wrestling, boxing and weight-lifting 15-16 years).
Table – 2.3

Sports School

(Track and Field separately)

Approximate plan for the most perspective boys – 1982-88 Norms for the long term training programme with the emphasis of physical development and preparation

<table>
<thead>
<tr>
<th>Candidates</th>
<th>Selected events</th>
<th>Training duties year wise</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>I year</td>
</tr>
<tr>
<td>General</td>
<td>Lifting strength</td>
<td>60-70 kg</td>
</tr>
<tr>
<td>Physical Preparation</td>
<td>Strength of right and left hand ups</td>
<td>30/25</td>
</tr>
<tr>
<td>Special physical preparation</td>
<td>30 M. Run Standing Bread Jump</td>
<td>4.0 Sec.</td>
</tr>
<tr>
<td></td>
<td>Standing Tripple J</td>
<td>2.10 M</td>
</tr>
<tr>
<td></td>
<td>6.00 M</td>
<td>6.50 M</td>
</tr>
<tr>
<td>Sports preparation</td>
<td>Perfection of Norms for Qualification</td>
<td>4 Events II Category</td>
</tr>
</tbody>
</table>
Table – 2.4
Number of Competition in a year depends upon age and sports qualification in Track and Field

<table>
<thead>
<tr>
<th>Events</th>
<th>12 years</th>
<th>13-14 years</th>
<th>15-16 years</th>
<th>17-18 years</th>
<th>Indications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Different event</td>
<td>4-5</td>
<td>5-7</td>
<td>10-12</td>
<td>12-15</td>
<td>For specialization group</td>
</tr>
<tr>
<td>Many events</td>
<td>1-2</td>
<td>2-3</td>
<td>3-4</td>
<td>4-5</td>
<td>For non-specialization group</td>
</tr>
<tr>
<td>(Decathlon and Penthlon type)</td>
<td></td>
<td></td>
<td>1-2</td>
<td>1-2</td>
<td></td>
</tr>
</tbody>
</table>

Table – 2.5
Norms indicating the correct age to start training as well as competitions

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Types of Sports</th>
<th>Age of Training</th>
<th>Age of Competitions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Athletics (T &amp; F) 400-1500m.</td>
<td>10 – 12 years</td>
<td>15 years</td>
</tr>
<tr>
<td>2</td>
<td>Athletics 60 – 100m.</td>
<td>10 years</td>
<td>12 years</td>
</tr>
<tr>
<td>3</td>
<td>Basketball</td>
<td>8 years</td>
<td>12-13 years</td>
</tr>
<tr>
<td>4</td>
<td>Boxing</td>
<td>12-13 years</td>
<td>15 years</td>
</tr>
<tr>
<td>5</td>
<td>Football</td>
<td>10-11 years</td>
<td>12-13 years</td>
</tr>
<tr>
<td>6</td>
<td>Fencing</td>
<td>10 years</td>
<td>12-13 years</td>
</tr>
<tr>
<td>7</td>
<td>Gymnastics (Sports)</td>
<td>11 years</td>
<td>12-13 years</td>
</tr>
<tr>
<td>8</td>
<td>Gymnastics (Arts)</td>
<td>10 years</td>
<td>12-13 years</td>
</tr>
<tr>
<td>9</td>
<td>Handball</td>
<td>10-11 years</td>
<td>13 years</td>
</tr>
<tr>
<td>10</td>
<td>Swimming</td>
<td>10 years</td>
<td>12 years</td>
</tr>
<tr>
<td>11</td>
<td>Tennis</td>
<td>8 years</td>
<td>10 years</td>
</tr>
<tr>
<td>12</td>
<td>Table tennis</td>
<td>8-9 years</td>
<td>10 years</td>
</tr>
<tr>
<td>13</td>
<td>Volley ball</td>
<td>12 years</td>
<td>13 years</td>
</tr>
<tr>
<td>14</td>
<td>Wrestling</td>
<td>10 years</td>
<td>12-13 years</td>
</tr>
<tr>
<td>15</td>
<td>Wrestling</td>
<td>10 years</td>
<td>12-13 years</td>
</tr>
<tr>
<td>16</td>
<td>Weight lifting</td>
<td>13 years</td>
<td>14-15 years</td>
</tr>
<tr>
<td>17</td>
<td>Water polo</td>
<td>11 years</td>
<td>12-13 years</td>
</tr>
</tbody>
</table>
The success in sports greatly depends upon the correct selection of events and sports and systematic training in the most scientific manner. Besides that emphasis must be laid on participation in competitions. It must be gradually increased and start the competitions only in the required age depends upon the various sports disciplines, special care and attention must be given to the children of various age groups regarding their competitions because the influence of competitions differs from individual and group of group.

During earlier stages (11-12) the competitions must be limited to intramurals, inter-school (13-14) and district and later on inter-district basis. Regularization the competitions and fixing the age for entering competitions in various sports disciplines is an important factor. Table No. 6 represents the competitive age for each sports discipline. The sports school children are classified into four groups starting from infants to senior boys and girls.

Educational thinkers and philosophers, both ancient and modern have, through the ages alluded to the incompleteness of educational experience, if it does not include healthy physical activity, indoor and outdoor. The scientific nurturing of the human body with a view to fitting it both for recreating and for the strenuous demand which work-a-day life makes on man has been commended by thw wise ancestors set great store by the development of the physique and indeed in our ancient universities, archery was one of the curricular subjects. The great names of men who had made a mark in the field of sports in our story are legend.

The aim that education sets to provide, should embrace not only the mental but also the physical well being of mankind. The one is inconceivable without the other. If education is to ensure harmonious growth
of the body, mind and soul, its influence has to commence right from childhood. Educational experience should help in the conscious release of the vital energy of youth. As discipline comes easier to a child not yet in its teens. Education should catch them young and inculcate their interest in sports, athletics and team game which generate the self-confidence, team spirit, and a respect for the other person’s point of view, so essential for the democratic way of life.  

Surveying the field of physical education and sports in our country today, one cannot help feeding disconcerted to some extent that our progress has not be as rapid as we could have wished. We still find a shortage of essential facilities, like playing fields, auditoria, sports equipment and so on. We also do not have a sufficient number of trained coaches, and there is an unfortunate absence of a coordinated approach to the training and building up of sports talent. Financial resources, everyone is aware, are scare, but it is an open question whether we are making attempts to pool and harness the available resources for the purpose. This is a matter of cooperative endeavour where, in addition to the Government, all sports loving and sports conscious organizations, and members of the together and get a move on with the already contemplated and formulated plans of action.

I would like to stress that in addition to modern games, out traditional rural sports like Kabaddi, Kho-Kho, Bullock Cart Race etc. should be kept alive. While we should aim at excellence in modern games like Tennis, Cricket, Hockey etc. their high cost stands in the way of popularizing them. They centers the most significant feature of our rural sports is that they do not involve any discipline of mind and body and promote community feeling, eschewing all differences of caste, creed, language and religion. We
must attach increasing importance to rural sports because they are situated to our social environment. It is a matter of gratification to learn that we have launched rural talent in sports and games. If we cover our rural areas and sports events begin to draw our rural youth, both boys and girls, in an increasing measure, from every corner of the country it will prove to be a positive milestone in the realm of physical education. Such facilities and talent as are obtained in metropolitan cities, will in the long run, fail to make a significant impact on our sports landscape, if they continue to be confirmed to the urban folk. Who from a microscopic minority of our population. I consider the test of our progress in the field of games and sports lies in the extent to which we are able to mobilize rural youth in the service of sports.

Let us hope that for the fifth plan period, there, will be a reasonable financial outlay to support our program in the field of sports and games what is more important, if per chance the financial allocations do not happen to match actual requirements. Let not our will and determination to do our best with the available resources be eroded in any way.

It is not my pleasant duty to congratulate the awardees present here today on their impressive record in their field of sports. I hope that they will continue to maintain their high standard in the years ahead and reach out to new heights of achievement.

The term “performance” is here taken to mean both the act i.e. the process and the result of performing. To achieve a performance always implies mobilizing and concentrating one’s powers on the discharge of a task, the achievement of a goal, by overcoming all difficulties involved. To perform, therefore, always means something more than just do something or
pass the time of day. Performance is always tasks-oriented and determined by a goal, its personal character necessarily introduces an element of relativity into its evaluation. When speaking of a particular person, we say “optimum performance,” when speaking generally, we say “maximum performance.”

The will to perform always urges forward and induces progress. The limits reached today shall be moved farther tomorrow. The will to perform is what makes a man enter un-trodden territory and confront the unknown. When personal conditions are favorable and environmental conditions are excellent, optimum performance may be turned into a record. The desire to perform is a basic drive, inborn and active in every person. It is the drive that leads to the development and evolution of natural qualities. The efforts it triggers off lead to an improvement of capabilities and to broadening of knowledge thus contributing to perfection of personality.

Capability and knowledge, the pillars of human existence, are never a gift, they are always the fruit of systematic and sustained effort. Vital élan, ambition and emulation reinforce the intensity and the constancy of this drive which is fed by worthy motives, and is evident in all areas of individual or social life as a manifestation of the total personality of man.

The whole educational system bears the imprint of the effort to promote, ascertain and evaluate performance. It begins at school, with examinations and homework used as means of checking performance. Results obtained are recorded and confirmed by marking, by promotion, by prize awards, by the recognition of qualification. The same line is followed through vocational training or higher education, where again examinations,
often of a competitive character, are used to ascertain performance and identify aptitude for particular forms of vocational training.

An outstanding performance capacity or unusual performance in any field is sources of high social prestige in modern society. The structure and organization of contemporary economy are clearly performance-oriented. Under the keen competition prevailing in commerce and industry today, performance is all that counts and success belongs to one who can achieve best results at lowest cost. Mostly bonuses and other advantages fan the will to perform and the ingenuity of employees.

In the fields so science and art, the drive to perform acts as a culture-creating power, innumerable scientific and artistic competitions provide a continuous challenge leading to intensification of creative effort. The award of distinctions, plaques and prizes serves as a confirmation of success. Many a scientific work and many an important work of art would never have been created were it not for this challenge.

Performance always has a personal character and always expresses man’s personality as an individual. Whenever this wholeness is broken, whenever performance becomes detached from a man’s person or becomes one-sided, then performance takes a course that is harmful to man, becomes the objects of criticism and needs a corrective action.

The tendency to performance is subject to similar limiting factors in the social context. Measure and goal of performance are determined by the individual, the limits of performance, on the other hand, are set by the rights and demands of our fellow humans and by the interests of the community as a whole. Where inconsiderable selfishness, unbridled ambition and vanity
become the determinants of action the violation of one’s obligations towards the community begins. 

The affirmation of performance and of the will to perform, includes a positive attitude towards the outstandingly high, the extraordinary performance of-in sports terms-the record. Without this continuous upward shifting of limit, without the ever renewed penetration into un-trodden territory, without the creation of ever new possibilities there could never be progress in technique and art, there could never be a broadening of our abilities. But at the top too-in fact especially at the top-is it necessary to see that the endeavor toward performance remains within the limits of action guided by moral principles so that performance itself may remain human.

**Performance in Sports:**

The physical aspect of man’s being is not excluded from man’s overall tendency to perfection. Health, power, skill, endurance are values held in high esteem. The beauty and harmony of perfect body have always aroused so much admiration, that man has even been led to try and correct the deficiencies of nature by artificial means.

However, the natural way to approaching physical perfection is through strenuous efforts and systematic exercise. Any natural assets present need development through demand exceeding ordinary utilization. Whenever a further stop is to be achieved in the direction of perfection, the demand must be a little higher than the previous limit of ability. The progress experiences serves to confirm that the effect was not in vain. Sport is thus always more than diversion or occupation and performance belongs to it by nature.
The will be perform is further intensified when it comes to the ascertainment of performance, when one’s performance is compared with the performance of others, when one seeks a decision concerning one’s success or failure by submitting to performance controls. Sports performance, however, finds its supreme expression in actual competition, in the struggle for championship or record. The hard confrontation with an opponent who is inspired by the same will, demands the utilization of last reserves of energy and mobilizes as yet untapped powers. The improvement of one’s own capabilities receive its decisive impulse – even when the victory is not achieved from the will to surpass the other’s performance.

Performance in sports is born of basically optimistic attitude. It is the expression and the result of an endeavour which heightens and condenses the sensational of living. It happens within a shorter or longer interval of time and leaves no concrete result behind – unless one regards as such its representation in words and pictures.

Performance in sports as we encounter it in competition, is the fruit of the past, is an intense experience of the present, and a breath taking driving force into the future. The desire for something better and more perfect shapes and moulds the personality, and leads to actualization of the human-being. Man becomes liberated from the attitude of passive functioning imposed upon him by modern society and rises, out of the fullness of his existence, to free and responsible action. The athlete who surpasses the former limits of his ability and performance, meets the ‘new’ with the spirit of one who searches and dares.  

Though undoubtedly associated with toil and effort, performance in sports is not like work. Because this is toil freely chosen. It goes beyond
external obligation and reaches the fullness of genuine human-ness. Leaving fear and uncertainty being, the performing athlete gains confidence from the experience of self-confirmation “Homoudens” by engaging in this kind of activity reaches out to the edge of creation. His action is permeated by life-giving, blissful, forward-driving joy—the joy of a fit body, of movement of performance, of action in common with others who share the same ideas and the same aims.

The reaching out for performance in sports as well, as in cultural and social life, is taken in isolation—subject to no limitations. Here too, top performance is both result and causative factor of progress. No one and no power in the world can eliminate the drive to jump higher, to run faster or to throw farther than any man has done before. Nor can be fascination that radiates from top performance ever lose its impact upon performer and fan. No more will anyone ever be able to prevent champions and record holders from receiving a measure of public attention that many besides the stars’ defeated opponents find rather disproportionate. Performance in sports attracts applause and liking more readily—compared with performance in other spheres—among large masses of the population. Top performance in sports become placards and advertising factors and are regarded as trumps in the power games of nations. The result of this is again the accruing of financial, professional and social advantages to the top performer in sports.

There is no doubt that the struggle for performance is associated with the risk of over estimation and abuse. The overestimation, not to say deification of the results obtained in this area, especially if one takes into account the actually measurable result only, may lead to a ‘deformation of the human image’ (Durkheim) and hence exercise a harmful influence on an
integrated concept of life. One risk resides in the possibility that all forces of the human personality are put so unilaterally at the service of this one endeavour. That all other sectors of life receive insufficient attention. Another danger is that the fascination of top performance in sports may assume such dimensions as to induce people to resort to means external to the human person in an effort to improve performance. The worldwide discussion concerning the problems of doping indicates that we have already reached a dangerous stage in this development. Whoever has a real concern for sport, whoever is in favour of performance right to the top, must do something about averting these dangers and false steps.\textsuperscript{9}

The point is to incorporate sports performance and the striving after into the integrated human existence and development and thus lend measure and goal to it. The point is to guide the forces included in and liberated by this kind of endeavour as to ensure that they serve man and are not turned into means for man’s “psycho-physical exploitation” (Prokop). The striving after sports performance, top performance in particular, ought to be evaluated according to what it means for man as a whole for his development and his maturing. This is a field of direct confrontation with the animate and inanimate environment, a change to gain extensive and deep-reaching experience, at field of self-realization and maturing. Man can here ascertain for himself, in direct, physical but not mortal, combat what he is really capable of; he can learn how difficulties may be overcome and goals achieved, by appropriate preparation at any sports level, leads to a recognition of one’s own possibilities and limitations and so, through a correct self-evaluation to healthy, vigorous but not unrealistic self-appreciation. Sports training and performing is best achieved in community
with others. This contributes to a clearer understanding to human relations and trains the athlete in social behaviour.

Experiences accumulated in this area and in this way contribute to keeping the mind aware of the body. They point out in a way not to be ignored, what one’s freedom to use his own body entails the obligation to keep sports performance within the context of overall education and to beware of any over estimation or under-estimation of it. This integration is of particular importance for the top performer—because he runs the greatest risks—who must be made to realize that even in the struggle for championship or record, not everything is permitted and that not all means are justified in obtaining what from the purely technical point of view might be feasible.

The athlete must understand that sport is not equivalent to life, that ability in sport is not enough to fill a life, and that performance in one’s profession or occupation ought to be put before performance in sports. He must realize that sports training and competition may be very important for a brief period in an athlete’s life but only that remains later which transcends performance and victory. In sports including top performance sports, the same moral principles apply as in all other fields of life. The limits of sports endeavour then, lie the where harm begin to be done either to other people, or to one’s own human qualities.\(^\text{10}\)

During the last few years abrupt rise in sports achievements have been observed in Soviet Union. The men behind these results were thousands of coaches, sports doctors, scientists and athletes who were engaged in researchers, in various aspects of competitive sports consequently sports training arrived at a new qualitative height. Soviet physiologists and sports doctors are trying to find out some complete methods through which we can
objectively determine physical work capacity of an athlete particularly in cyclic events. The author has collected some useful statistics out of researchers conducted from time to time by physiologists to help coaches understand particular stage of physical fitness of an athlete and plan their training programme accordingly. The technical and psychological trades of an athlete which are equally important to determine physical work capacity of an athlete have not been covered.

Training in sports starts by visiting a doctor. This is completely justified as any hidden deterioration in the health can be made evident. This deterioration can result in death under the influence of physical load. However this visit to a doctor does not stop athletes from continuing their particular event. Irrationally planned training and excessive use of force can lead an athlete to unhealthy state. High intensity and over training result in decrease of vital activity of organism and thus physical work capacity of an athlete falls down.\textsuperscript{11}

These disturbances can be checked if the athlete happens to be with the doctor or in the laboratory of a physiologist. In fact sports medicine in our days proposes some complex methods through which we can objectively value physical work capacity of an athlete. Further this will help us to plan the training programme in cyclic events of track and field.

Work capacity has close relationship with the training. The functional capacity of a sportsman to perform an activity with more intensity and in greater volume is much higher than a person who does not take part in sports. So the study of physical work capacity in natural and laboratory conditions provides indispensable information about the state of fitness of a
sportsman. These statistics are used during planning a training programme or fixing tactics in the race before the competition.¹²

While developing endurance in middle and long distance and marathon runners and walkers, the sports training is usually accompanied with the building up of functional stage of an organism at rest also. The frequency of heart contraction lowers down up to 35-45 beats per minute. Minute volume of blood (quantity of blood thrown out by heart in a minute) lowers down considerably. The arterial pressure is found the lowest. (The electrocardiogram curve shows an electric activeness of muscles). These movements show change in prolongivity of intervals and height of PQRST. Physical work capacity is defined as a particular state of physical fitness of an athlete which presents his complete physiological portrait, from preparedness and capacity to perform his event.

While reading heart contractions of an athlete, interesting data has been collected. It has been shown that under the proper systematic training when developing endurance the period of stress on heart muscles gets lengthened. The interval of supply of blood from the heart is some what shorter than it should be during particular frequency of heart contraction. The initial speed which increase the interval ventricle pressure also falls down. All these changes make us understand Syndrome Hypodynamics of Myokard. These changes show that strength of heart contraction also comes down and is economical in a state of rest.¹³

The frequency of respiration with the athletes also slows down. Comparing height and weight they have bigger circumference of thorax than those healthy persons who do no; take part in sports. The difference in circumference during inhalation and exhalation increases. The respiratory
muscles become more powerful and faster. Their amplitude of contraction also increases. There is considerable increase in the vital capacity. The training helps runners to develop powerful respiration and this results in expansion of bronchial tubes. Moreover there is also less resistance of air movement during good ventilation of lungs and thus bronchial canals also increase.

In sports training, muscles fibers break-up and their number also increase. As compared to athletes who specifically develop their strength the hypertrophy of muscles is found less with middle and long distance runners.

However fat tissue decreases in the organs of middle and long distance runners. Accompanied by this there is an abrupt rise in skin mass also (skin mass includes all tissues of the organism bearing fat). As middle and long distance runners increase their endurance, the size of their heart also increases. During the exercises there is hypertrophy of heart muscles and with this the strength of heart contraction also increases. This builds up cardiac activity at rest.\(^{14}\)

In training supply of carbohydrates increase. There is rise in active fermentation and there are fast reactions in anaerobic and aerobic functions. Quantity of myoglobin in the muscles increase. During muscular work these functional changes facilitate process of adaptation in the organism of an athlete. We can say, long distance runner runs on a track for an hour with speed of 5 meters per second. Physically fit but untrained men may maintain such speed for not more than 3 minutes.

One of the important effects of training is that there is better economization in the functioning of organism at rest. Total expenditure of energy falls down to 10 to 15 percent (Investigations made in the morning
with empty stomach after a day’s rest) and there are changes in functional state of cardio-vascular, respiratory and other systems.

On the basis of this phenomenon some changes take place in the activeness of nerves and hormones mechanism which regulate physiological process in the organism and this leads to economy in consumption of energy in the normal life. However investigation of functional state of an organism in the normal state is not sufficient for an objective evaluation of physical work capacity of an athlete.\textsuperscript{15}

In this connection we must study the reactions of greater load of training. This includes similarities in the form of movements, intensity prolongivity and rhythm. Various functional tests can be used like sit-ups or spot-running with given tempo and rhythm. Now a days investigations are being conducted at various places and their results are compared for determining physical work capacity. Physical work capacity is measured in term of unit. Harward’s step test is the most simple test – on a box with fixed height and rhythm. The weight of the subject is taken into account before fixing the size of work.

Velo-ergometer is also being widely used. Fixed dose of resistance is set on the rotating pedals. It is not sufficient to calculate size of load in a set frequency of pedaling. When there is infringement in particular rhythm of movement, resistance also changes automatically. This further helps to maintain regular intensity.

Running on the rack is the most perspective method to determine the work capacity of an athlete. In this the intensity of work is established with speed.
Numerous investigations were conducted on athletes and healthy but untrained people. The researchers brought to light significant variations in their reactions during their evaluation of changes taking place in training as compared to untrained people. Expenditure of energy during performing standard work is less with athletes. This is due to insignificant change in minute volume and frequency of a heartbeat, up-take of oxygen, ventilation of lungs and frequency of respiration. During and after performing standard work the sportsmen recover appreciably faster. This also helps to find out work capacity.  

If volume of lad is accompanied by fixed frequency of heart contractions then also we can find out state of work capacity of an athlete. It is well known that intensity of work and frequency of heart rate are closely related to each other. Intensity of work is taken into account when the frequency of heart rate reaches 150 to 170 per minute. An athlete undergoes repetitions of lead, after three minutes rest. We can determine practically exact physical work capacity (or P.W.C) keeping in view that volume of load is accompanied by frequency of heart contractions. The heart beat is taken immediately after the finish of work load.  

The volume of P.W.C. 170 is 1000 Kg M/Minutes with physically fit but untrained people and 1800 Kg M/Minutes with good, middle distance runners and 2000 Kg M/Minute or above with those athletes who clocked 3.40 sec. in 1500 meters. Long distance runner’s volume of P.W.C. 170 is still better and exceeds the above maximum norms.  

There is a marked relation between P.W.C. 170 and maximum uptake of oxygen. This carries significance for the evaluation of P.W.C. as the training improves, the uptake of oxygen increases during maximum work.
However maximum oxygen uptake is found in endurance type races like middle and long distances. During maximum physical work practice, maximum oxygen uptake reaches 5.5 – 6.5 liter per minute or 80 – 90 ML in one kilogram weight of an athlete. Maximum uptake of oxygen with untrained people does not exceed three litre/M.

Maximum uptake of oxygen can be found out only by performing maximum load. Intensity is increased gradually. Keeping in view the above, there exists a variation in maximum load. During this the dose of work is maximum. As given above the sportsman could maintain their speed on the track 20 to 30 times longer than the untrained person.

Running distance with maximum speed offers natural conditions for research. It enables us to compare physiological reactions. To run a distance in particular said time is said to be one of the important criteria for determining physical work capacity. More-over physiological investigations show that how far an athlete had made use of his capacities. It should be clear that in spite of all the principles of objective evaluation of P.W.C. an athlete may not achieve the indicated performance. Lack of psychological preparation, wrong judgment, becomes cause of defeat specially when sportsman is otherwise sure of his victory.18

So it is necessary to investigate the activities of different systems and organs at rest and also during performing the standard work and work with maximum prestige. Performing work in different situations gives us information about dynamics of P.W.C. of an athlete. During these investigations one must also keep in mind subjective qualities like will power.
Most people think that physical education and sports are concerned only with the skills in muscular activities. But sports do not call only for muscular responses, but also make constant demands on the participants for mental. Social and emotional reactions, which are highly significant to his intellectual development, social adjustment and moral education. Sports make their own contribution in the total development of personality. “While a few people are turned into saints by the education of their souls, millions are turned into sinners by the non-education of their bodies”. (Jacks, L.P. quoted Jack, M.L). 19

Play or physical activity is a biological necessity. The vigor and vitality of a man are dependent on muscular exercise for their development and entirely for their maintenance and apart from the conditioning influences of heredity and favorable nutrition, vigorous physical activity is the indispensable means today for national health and strength.

Over the years the living altered, and new stresses have pressed upon the old biological patterns of man.

Play, of which games, sports and physical recreation activities from a part, belongs to the art of humanity. Such activities have formed a basic part of all classes including all racial groups in all historical ages, because these are as fundamental from of human expression as music, poetry and painting. Play is a spontaneous expression life. It is natural, worthwhile, and enjoyable form of human expression and eminently deserves support in its own right and for its own sake. It develops the natural capacities of the individual.

The wolfe den report says that, “it is not in actual fact obvious that those who have been brought up on competitive team games are more
unselfish, co-operative and self-sacrificing than those who have not”. In a society in which authority is increasingly defied and rules are very often broken, it is the rules and internal discipline of sport that can be seen to have force.  

The trends of life and motives are not only move but also tangled, and no amount of medical research will disentangle them all. But consider those vaguest and least measurable social ills, anxiety, apathy, loneliness, boredom and the kind of un-easiness that directly or indirectly takes a third of every patient to a doctor’s door. Sports cannot heal deep psychological wounds but it is yet to be discovered how for a pervasive indeterminate malaise might be assuaged for many people by some form of physical recreation. (Bannister, R).  

The child learns to crawl to which he is impelled by his own urges. He learns to manipulate with toys and to share the joy of manipulation with other. Sometimes he quarrels with his team-mates, merely to make up at the next opportunity and play with them again. He learns through his own activities. His play brings in him change, modification and adjustment in relation to his environment.  

Sports and pastime are an integral part of modern culture and have important tasks to fulfill in education. In fact play is nature’s means of education. Its influence is not limited to sport fields, but extends to many realms in the rapidly developing modern society.  

In this rapidly changing work it is possible to reach any community with an adequate airport by aero plane in fifteen hours or less. Today, any curriculum which ignores the world as a frame of reference is rather obsolete. Political ideologies differ from country to country and these
differences act as barriers to international understanding. Games sports, dances and art, however, are aspects of culture which act as important cultural bridges between people of the world. International competition in games and sports such as Olympic competitions; dance festivals, boxing bouts, track and field meets, international golf, tennis, skating and skiing to serve as integrating agents between the different nations of the world (Cowell & France, 1963)  

The modern age of science and technology has minimized muscular effort and by and large man has begun to live a soft and sedentary life resulting in lower standards of physical fitness, with all its consequences. This poses a big problem and more so in advanced countries where life has become more mechanical and man meets his daily requirements and obligations with the least manual or muscular effort. This has also created the problem of leisure.

The need of sports and physical recreation is being increasingly felt as answers to the problems referred to above.

Summing up, the beneficial effect of sports and pastimes may be classified as under:

1. **Physical Effects:**

Sports help in the natural growth and development of an individual and enables him to maintain the efficiency of the vital organs to the level needed to meet his daily needs and obligations successfully. Sports also help in the acquisition of good posture which has great bearing on the personality of the individual.
2. Psychological Effects:

Sports and pastime have great psychological values. They provide an opportunity for the sublimation of instincts. One can relieve one's mental tension and inhibitions through participation in sports and pastimes activities, especially in adolescent age sports provide a good channel for utilizing their energy and developing capabilities in healthy and creative directions. Sports also help in the development of healthy personality of an individual.\(^{24}\)

3. Sociological Effects:

Sports have great civic values also. They develop the qualities like cooperation, unselfishness, discipline and patience, fortitude and self restrain. The spirit of sportsmanship which is the highest social and civic virtue can best be inculcated through sports and games.

In competitions penalties are imposed on fouls, which help in playing in the right manner. Such an attitude helps in the later years in playing the game of life fairly and squarely. Participation in sports reduces the delinquency rate in the society.\(^{25}\)

The development and refinement of performance in motor activities is one of the major developmental tasks of childhood. According to Malina (1973) all normal children have potentials to develop and learn a variety of fundamental and special motor activities since such activities are an integral part of their behavioral repertoire. The behavioral repertoire, on the other hand is the outcome of the child’s environment, which includes child’s interaction with natural objects, manmade cultural artifacts and interaction with other human beings. The motor ability of a child is likely to be
influenced to a great extent by his inter-action with the various aspects of environment individually or collectively.  

Motor ability is a complex phenomenon consisting of various components (Hockey, 1981: Cratty, 1975). Balance is one of the components. The improvement in various components including balance has been observed up to eighteen years or so along with other improvements in motor behaviour (Schamidt, 1982). The improvements in motor abilities have been attributed to natural growth and development of the individual’s organism. Such improvements being phyllogentic in nature are related to the maturation. In addition to natural growth, the environments in which the child lives, offers opportunities to carry on a variety of activities in different settings-home, school etc. the individual’s involvement in multifarious motor activities and his socio-culture milieu are bound to lead to motor development which is ontogenetic in nature.

The changes and differences in development of motor abilities can be studied while examining trends of performances on motor task that are common in the experiences of most of the children. The developmental changes in performances can easily be interpreted in relation to age and sex of the individuals. Studies in balance performance have used many methods for ascertaining their level both in static and dynamic. It becomes obvious that performances in balancing can be type of posture to be assumed while balancing, supporting surface, ocular control, vestibular apparatus and the complicated interaction of working together of visual and muscular systems (Crattyk, 1979).

The age trends in balancing has been studies by Seashore (1949) who concluded that in general sex difference in balancing during ages of six and
twelve were not marked. On the other hand Keogh (1973) has demonstrated that grills during 7-9 years of age were found to be superior to boys. He also observed that girls tend to improve during 7 and 9 years and again during their 10 years of their age. Cratty (1979) found somewhat similar age trends in developing of balancing ability. According to him, when seen as groups, there had been not marked differences between the performances of boys and girls in dynamic balance but distinct differences were seen in performances in static balance.

He performance level of sportsmen in various games and sports is showing considerable improvement day by day. The main factor responsible for this improvement is the development of new training methods based on scientific principles derived from exercise physiology which are incorporated in basic physical education and advanced sports training.

Cardio-respiratory endurance is characterized by moderate contractions of large muscle groups for relatively longer periods of time, during which maximum adjustments of the cardio respiratory systems are necessary as in sustained running, swimming, bicycling and the like. When many muscle work the effectiveness of these systems then becomes the limiting factor in endurance. It is agreed that in vigorous activities of long duration oxygen supply to the tissues is the main limitation, therefore, the primary objective of cardio-respiratory endurance is to improve the supply of oxygen to the working muscles.  

Cardio-respiratory endurance involves the efficiency of such elements as the heart and lungs, the vessels supplying the blood to all parts of the body, the oxygen carrying capacity of that blood and the capillary system receiving that blood. Therefore, when an individual undergoes training, the
physiological variables namely maximal oxygen uptake, pulse rare, vital capacity, blood pressure, breath holding time, maximum expiratory pressure, strength and strength endurance associated with the efficient functioning of are affected.

Santo (5) selected 76 college are men to study the effect of regular physical education programme on cardio-respiratory fitness. The cardio-respiratory fitness was measured using the Harvard step test, 10 Minute Run / Walk Test, a Three Minute Shuttle Run and a One Minute Lateral Jump. It was concluded that regular physical education programme groups improved significantly in cardio-respiratory fitness in comparison to control group.\textsuperscript{29}

Letter Moser (2) studied certain cardio-respiratory changes on two physical education classes of grade seven of equal physical fitness. One of the classes ran 880 yards daily in addition to normal programme of physical education whereas other class served as the control. The experimental group improved significantly in 600 yard run walk and Kasch pulse recovery test.

Harper, Billings and Mathews conducted a study of the effects of two physical conditioning programmes on Cardio respiratory fitness of 25 college men. The subjects were placed into three matched groups on the basis of maximum oxygen consumption. One group participated in a modified army conditioning programme of calisthenics and marching while the second group participated in a programme of interval running and the third group (control) participated in recreational activities. The groups met five days per week for seven weeks. The results showed that both interval and army trained groups improved significantly in their cardio-vascular efficiency. The control group did not significantly improve.
Mookharjee (6) in his study found that a regular programme of swimming of 15 weeks duration significantly improved Cardio-pulmonary dynamic index of swimmers. 30

Physical education should lay greater emphasis on elementary school children. There is need to prepare reliable and valid physical fitness tests which would objectively measure the fitness of elementary school children.

Certain physical fitness tests are available, but they cannot be administered to children studying in elementary schools in our country, because the set of norms which these test have are suitable only for these children on whom such tests have been administered in other countries. 31

Partick Ross Cobb (4) had constructed a motor fitness test battery for girls in lower elementary grades. The items included in this test were Clarke’s strength composite, Micloy’s endurance ratio, leg extension and flexion, well’s sit and reach, Dodging run, bass length wire stick balance, and vertical jump. The scholar was of the opinion that these tests will measure the essential components of motor fitness such as muscular strength, cardiovascular endurances, flexibility, agility, balance and power.

Glover (1) had developed a physical fitness test for the primary grade children. The items of the test were (1) standing broad jump (1) 400 feet shuttle run (3) sit ups and (4) seal crawl. It was felt by the researcher that this test could not measure all the motor qualities. The researchers, therefore, planned in terms of developing a new test with a larger number of test items for measuring the most essential motor qualities required for an elementary school child, suited to Indian conditions.
Latest findings in kinematics, biomechanics, the building of sports facilities and the manufacture of sports implements are further factors affecting considerably the technical training.\textsuperscript{32}

The specialties, swimming proper, water polo, diving and synchronized swimming place differing demands on the athlete; this also required special qualities in the planning and holding of training. All of them have in common that high performance can be achieved already at a very early age, especially in swimming and diving. This makes it necessary to begin consistent long term training during childhood. Latest scientific findings and long years training process into two grades differing in the aim, content, takes and means and methods of training. The first grade term “basic training”. Each is again sub-divided into two stages each of which is interlaced with the continues the previous one. The first, basic stage of training is directly linked to the general training and often already carried out parallel to it. This trend is particularly evident in diving and synchronized swimming but can also be noticed in water polo and swimming.\textsuperscript{33}

Since the principles of the basic training are very similar, let us explain in detail the aims, tasks and contents as well as the planning of training at the example of swimming. This could be effectively modified in line with the special requirements of the other fields of swimming.

**Hints for the basic training in swimming:**

In general one cannot give any timing for the beginning of training in any sport; training should begin when the general training of a boy or girl in one sport in almost completed and when the talent, personal inclination and
the character admit the conclusion that this boy or girl will achieve good or
probably even very good performance in the respective type of sport.\textsuperscript{34}

This holds essentially good also for swimming. The fact, however,
that international top class performance are already achieved during
childhood or early youth necessitates an early beginning of basic training.
Thus through the systematic buildup of sports performance it is ensured that
the following higher stages of the training process making higher demands
on the organism is absolved without any possible physical or psychological
harm. According to present experience, the most favourable time for
beginning basic training in swimming is the second year at school, provided
that the general training was completed by the end of the first school-year. If
the general training starts only at a later time, the beginning of the basic
training must of course also be postponed. Basic training in swimming lasts
about 4 to 6 years, in general it depend however largely on the individual
physical and mental stage of development of the young athlete, of the
pedagogical influence exerted by the P.E. teacher, instructor or trainer and
the outside training condition such as sports facilities weather time of the
day etc. (In other sports there are also a number of other factor affecting the
period of the basic training).
References:


8. Ibid


32. Colleen Hall Chisholm: ‘Personality Traits of Successful Female Gymnasts,’ San Jose State University, (1985).
