FÉDÉRATION INTERNATIONALE
DE VOLLEYBALL

COACHES MANUAL

2011

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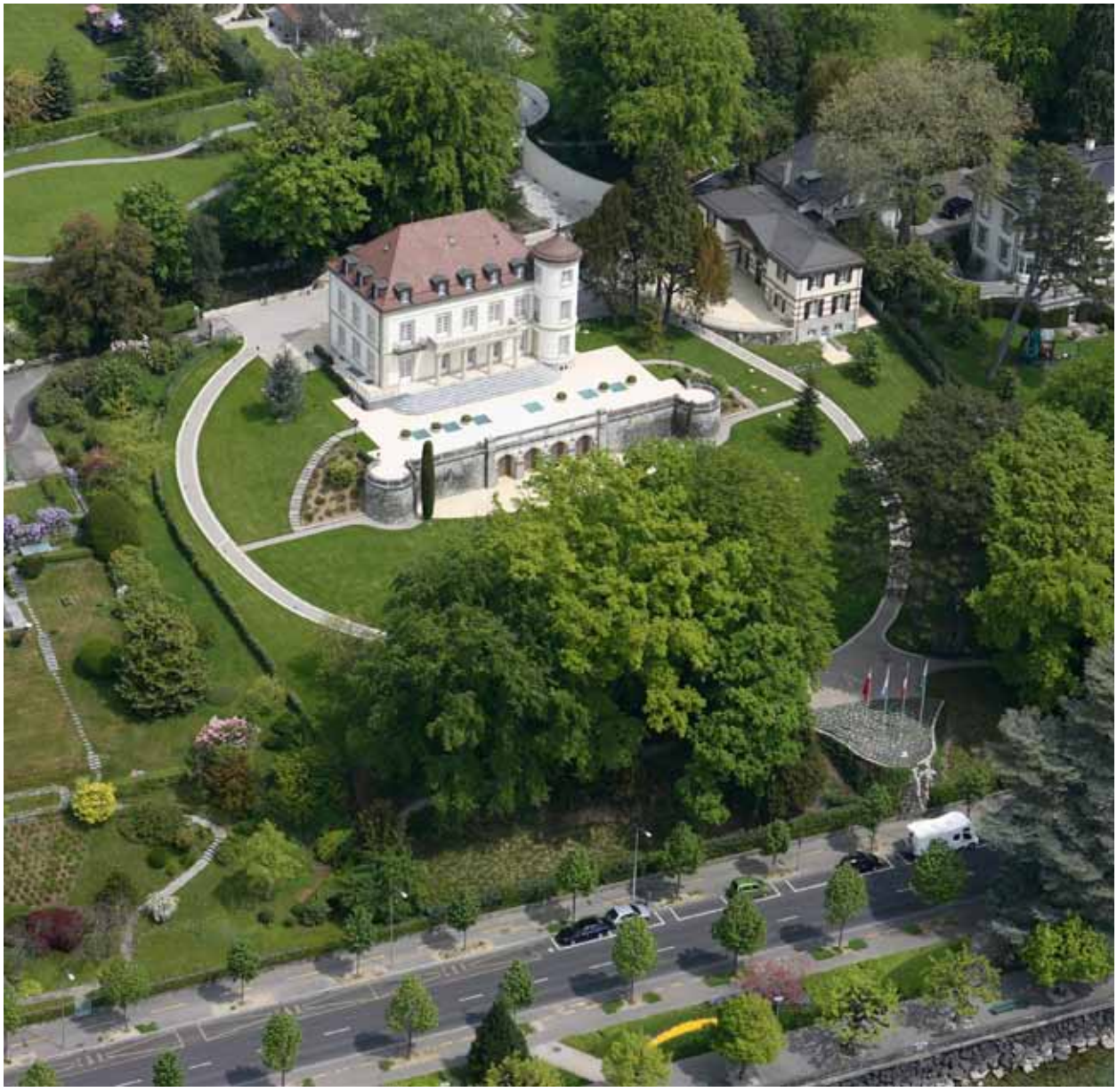
Chapter I
Introduction

by Mr. Helgi Thorsteinsson, Technical & Development Director

The FIVB (Fédération Internationale de Volleyball)

The FIVB is the world governing body for Volleyball and Beach Volleyball, founded in Paris, April 20th 1947, as non-profit making organisation committed to development of its disciplines worldwide, through staging and organisation of international competitions, courses, seminars and promotion of other educational activities. This is achieved through broad collaboration with the 5 Continental Confederations, 220 national federations and other stakeholders. The FIVB has a legal status and its headquarters in Lausanne Switzerland since 1984.



Preparing the grounds

One of the most crucial aspects of Volleyball development is linked with the fact that many national federations lack resources to organize their sport and coaching structure, or even in some cases it is non-existent. The reality is different among the 220 national federations affiliated to the FIVB and there is also a broad cultural difference among them. As a result thereof there is a strong demand for education in Volleyball like figures show as in the last five years the FIVB has educated more than 3'500 coaches in all Continents. The core objectives of the FIVB development philosophy considers this fact and allows national federations to develop their own coaching structure through education of coaches, athletes and officials by running coaches courses and technical seminars as needed with qualified international instructors. Without a dedicated team of individuals and broad collaboration between the FIVB, Confederations and national federations such achievements would not be possible.

It is therefore evident that national federations must establish realistic future plans, taking into consideration the development of athletes and participation of teams in competitions, where qualified coaches improve the performance through various programmes that will take place both at the national and the international level. In this sense it is important to stress that qualified coaches are needed as well at the grass root level as through the mass the future stars will rise.

Grass root development

Strong initiatives have been taken by the FIVB to endorse and promote grass root strategies by introduction of mass Volleyball and in particular the concept of the Volley All Festival that has balanced the gap between the elite and the grass root levels.

Since 2006 the Volley All Festival concept is endorsed by many national federations but in the last two years there has been a strong wave rising as figures reported show participation just below one million.

Educational material

The FIVB has in the last few years invested into new teaching material and made new resources available through the internet and its own webpage. It is a requirement that coaches benefit and utilize the best practice examples from the world best Volleyball players by accessing this material that is a part of the FIVB technical website as an open resource for national federations, players, coaches and officials. This material is now the basis for the teaching Volleyball during FIVB coaching courses and can be accessed in the FIVB website at:

- http://www.fivb.org/en/technical/worldchampionships/men/2010/
- http://www.fivb.org/en/technical/worldchampionships/women/2010/
- http://www.fivb.org/en/technical/junior/men/2009/
- http://www.fivb.org/en/technical/junior/women/2009/
- http://www.fivb.org/en/technical/youth/men/2009/
- http://www.fivb.org/en/technical/olympics/2008/men/
- http://www.fivb.org/en/technical/olympics/2008/women/
- http://www.fivb.org/en/technical/worldchampionships/men/2006/
- http://www.fivb.org/en/technical/worldchampionships/women/2006/

We play it Cool the new FIVB campaign to attract the youth to participate in volleyball and beach volleyball. Cool Volley is a proactive development tool aimed at assisting national federations to recruit youth through their projects at a national level. Each Federation can download a complete set of the Cool Volley campaign and rebrand it in line with its needs and goals. Cool Volley promotes volleyball as an easy, fun, and competitive way of playing.

The detailed teaching material can be accessed and downloaded from the FIVB website at:

http://www.fivb.org/en/development/cool_volley.asp

Extensive material and best practice examples on School Volleyball (teaching videos, and power point slideshows), also exist in the FIVB website through various presentations from national federations experts that can be accessed from the FIVB website at:

http://www.fivb.org/en/programmes/schoolvolleyball/presentedmaterial.asp

The above material is now a part of the electronic teaching library that is used during FIVB courses. The content of the electronic teaching library is developing rapidly with needed changes and new material.

220 affiliated national federations

Volleyball is today one of the major international sports, and the FIVB, with its 220 affiliated national federations is truly unique sport easily adapted to many indoor and outdoor settings as needed. It is therefore no surprise that Volleyball and Beach Volleyball is an ideal sport for all ages - it is fun and easy to learn. It requires few facilities and equipments, develops team spirit, provides for a great entertainment and is open for both males and females.

As the world governing body of Volleyball in all its forms (Volleyball, Beach Volleyball, Park Volley, U-Volley, Mini and School Volley), the FIVB manages and encourages the practice and the expansion of Volleyball but also offers and implements programs aimed at promoting global development initiatives through Volleyball.

The FIVB 5 continental Confederations are: Asian Volleyball Confederation (AVC), African Volleyball Confederation (CAVB), European Volleyball Confederation (CEV), South American Volleyball Confederation (CSV) and North and Central American Volleyball Confederation (NORCECA).

The 220 affiliated national federations by confederations are:

AVC (65 national federations)

Country	Registration
Afghanistan	1980
Samoa, American	1988
Australia	1968
Bangladesh	1976
Bhutan	1984
Bahrain	1976
Brunei Negara Darussalam	1982
Cambodia	1968
China, People's Rep. Of	1953
Cook Islands	1992
Fiji	1982
Micronesia	1996
Guam	1976
Hong Kong	1959
Indonesia	1959
India	1951
Iran	1959
Iraq	1959
Jordan	1970
Japan	1951
Kazakhstan	1992
Kyrgyzstan	1992

Country	Registration
Kiribati, Rep. Of	2000
Korea	1959
Saudia Arabia, Kingdom of	1964
Kuwait	1964
Laos, D.P.R.	1968
Lebanon	1949
Macao	1986
Malaysia	1964
Maldive Islands	1984
Mongolia	1957
Marshall Islands	1992
Myanmar, Union of	1961
Nepal	1980
Niue Island	1998
Nauru	1998
New Zealand	1970
Oman, Sultanate of	1978
Pakistan	1955
Palau	1998
Philippines	1951
Palestine	1980
Papua-New Guinea	1988

Country	Registration
Polynesia, French	1998
Korea, People's Dem.Rep.	1955
Qatar	1974
Saipan	1986
Samoa, Western	1984
Singapore	1965
Solomon Islands	1990
Sri Lanka	1955
Syria	1955
Tonga	1987
Thailand, Kingdom of	1964
Tajikistan	1992
Turkmenistan	1992
Timor Leste	2004
Chinese Taipei	1982
Tuvalu	1992
United Arab Emirates	1976
Uzbekistan	1992
Vanuatu	1986
Vietnam	1961
Yemen	1970

CAVB (53 national federations)

Country	Registration
Algeria	1976
Angola	1978
Burundi	1992
Benin	1964
Botswana	1988
Burkina Faso	1964
Central African Republic	1964
Congo	1964
Chad	1964
Côte d'Ivoire	1964
Cameroon	1964
Democratic Republic of Congo	1964
Comoros, Fed. & Islamic Rep.	1982
Cape Verde,Republic of	1988
Djibouti	1984
Egypt	1947
Eritrea	1998
Ethiopia	1955

Country	Registration
Gabon	1965
Gambia	1972
Guinea-Bissau	1992
Equatorial Guinea	1992
Ghana	1961
Guinea	1961
Kenya	1964
Libyan Arab Jamahiriya	1968
Liberia	1987
Lesotho	1992
Madagascar	1964
Morocco	1959
Malawi	1984
Mali	1964
Mozambique	1978
Mauritius	1959
Mauritania, Islamic Rep. of	1964
Namibia	1991

Country	Registration
Nigeria	1972
Niger	1964
South Africa	1992
Rwanda	1978
Senegal	1961
Seychelles	1982
Sierra Leone	1992
Somalia	1972
São Tomé and Príncipe	1984
Sudan	1972
Swaziland	1984
Tanzania	1984
Togo	1968
Tunisia	1957
Uganda	1982
Zambia	1970
Zimbabwe	1982

CEV (55 national federations)

Country	Registration
Albania	1949
Andorra, Principality of	1987
Armenia	1992
Austria	1953
Azerbaijan	1992
Belarus	1992
Belgium	1947
Bosnia and Herzegovina	1992
Bulgaria	1949
Croatia	1992
Cyprus	1980
Czech Republic	1947
Denmark	1955
England	1964
Estonia	1992
Faroe Islands	1978
Finland	1957
France	1947
Georgia	1992

Country	Registration
Germany	1957
Gibraltar	1984
Greece	1951
Greenland	1998
Hungary	1947
Iceland	1974
Ireland	1982
Ireland, Northern	1982
Israel	1953
Italy	1947
Latvia	1992
Liechtenstein	1978
Lithuania	1992
Luxemburg	1951
Macedonia, Ex. Yug. Republic of	1993
Malta	1984
Moldova	1992
Monaco, Principality of	1988

Country	Registration
Montenegro	2006
Netherlands	1947
Norway	1949
Poland	1947
Portugal	1947
Romania	1947
Russia	1992
San Marino	1987
Scotland	1970
Serbia	1947
Slovak Republic	1993
Slovenia	1992
Spain	1953
Sweden	1961
Switzerland	1957
Turkey	1949
Ukraine	1992
Wales	1989

CSV (12 national federations)

Country	Registration
Argentina	1951
Bolivia	1966
Brazil	1947
Chile	1959

Country	Registration
Colombia	1955
Ecuador	1951
French Guyana	1997
Guyana	1966

Country	Registration
Paraguay	1955
Peru	1955
Uruguay	1947
Venezuela	1951

Norceca (35 national federations)

Country	Registration
Anguillia	1992
Netherlands Antilles	1955
Antigua and Barbuda	1986
Aruba	1986
Bahamas	1968
Barbados	1988
Bermuda	1984
Belize	1984
Canada	1959
Cayman Islands	1976
Costa Rica	1970
Cuba	1955

Country	Registration
Dominica	1992
Dominican Republic	1955
El Salvador	1964
Guadeloupe	1992
Grenada	1989
Guatemala	1951
Haiti	1959
Honduras	1974
Virgin Islands	1966
British Virgin Islands	1980
Jamaica	1961
Saint Lucia	1986

Country	Registration
Mexico	1955
Montserrat	2006
Martinique	1992
Nicaragua	1980
Panama	1968
Puerto Rico	1959
Saint Kitts and Nevis	1988
Surinam	1976
Trinidad and Tobago	1964
United States of America	1947
Saint Vincent & the Grenadines	1987

History of the FIVB

The Founding

A decisive moment in the history of Volleyball's first 100 years was certainly that of the founding of the FIVB (Fédération Internationale de Volleyball) when in April 1947 representatives of 14 countries (Belgium, Brazil, Czechoslovakia, Egypt, France, Netherlands, Hungary, Italy, Poland, Portugal, Romania, Uruguay, USA and Yugoslavia) met in Paris under the leadership of France's Paul Libaud to found the FIVB. Libaud, President of the French Federation, was elected first President of the FIVB. The headquarters were established in Paris, where they remained for the first 37 years until 1984 when Mexico's Dr. Rubén Acosta took over the Presidency from Libaud.

The beginning of the FIVB World Championships

The first World Championships were organized in 1949 for Men and 1952 for Women and both have remained the biggest events in Volleyball, along with the Olympic Games, since 1964. The world competitions immediately generated enthusiasm, and the number of players and national federations affiliated with the FIVB grew by leaps and bounds. Volleyball fever had caught on just about everywhere and increased rapidly. FIVB promoted events began to multiply.

Olympic Games

Testifying to the prestige attained in 1959 at the IOC session in Munich, Volleyball was included as a medal sport in the Olympic Games. The game was played with 10 Men's and six Women's teams for the first time at the 1964 Tokyo Olympics, where the Japanese Women and USSR Men won gold medals. Consequently, the Volleyball phenomenon started in Japan soon after the Games. Thirty-two years later, at the Atlanta Games, Beach Volleyball, one of the world's fastest-growing sports, made its Olympic debut as Volleyball's successful second discipline. Volleyball and Beach Volleyball enjoyed tremendous success during the 2004 Athens and 2008 Beijing Olympic Games as two of the most successful sports.

The World Cup

In 1965, Poland hosted the first World Cup for Men before Uruguay hosted the first World Cup for Women in 1973. Following the first two editions for Men and the first edition for Women, Japan gave new life to Men's and Women's World Cups by staging the third and second editions respectively in 1977. From there on until today, with the sponsorship of Fuji Television, the quadrennial World Cup has become a major event and qualifies three teams for the Olympic Games.

Members rising

From the 14 founding members the FIVB grew to 45 in 1955, 89 in 1964 and 101 in 1968, distributed over the five continents: 25 in Europe, 25 in Asia, 25 in Africa, 11 in South America, and 15 in NORCECA (North, Central America and the Caribbean). Today the Federation counts 220 affiliated national federations including 53 in Africa, 65 in Asia, 55 in Europe, 35 in NORCECA and 12 in South America.

Dr. Rubén Acosta succeeds President Paul Libaud

One of the big turning points for the FIVB came in 1984 when President Paul Libaud, by then in his 80s and highly acclaimed for having founded the Federation and making it a significant reality on the world sports stage, resigned after 37 years of leadership. Dr. Rubén Acosta was elected new President to succeed Libaud at the World Congress in Long Beach, California.

The move

The FIVB moved its headquarters to Lausanne, Switzerland, the same year, bringing it closer to the International Olympic Committee and providing a wonderful base to promote the sport in worldwide competitions held in the five continents (Asia, Africa, Europe, South America and NORCECA).

From game to great TV spectacle

At the same time, Volleyball went through a number of modifications to change the face of the sport. The need to make it more telegenic in order to attract fans and sponsors led to major modifications in 1998, such as the introduction of the Rally Point System, the Libero player, the "let ball in play" rule and many other new rules that makes the game much more attractive.

Change at the helm in 2008

Mr. Jizhong Wei of China became the third President in the history of the FIVB after the 31st FIVB World Congress in Dubai approved by acclamation his election following the retirement of Dr. Rubén Acosta after 24 years as president. Mr. Wei, who will be President until elections are held in 2012, immediately ushered in a new era of development for the FIVB with specific concentration being made to support national federations and confederations in their activities and the growth of Volleyball around the world.

Changing direction

The FIVB invested more in development during 2010 than any other year in its history by allocating more financial resources to the FIVB Confederations to help national federations. The key behind the new initiative is increased support for grass roots development, with the beneficiary in the long term being Volleyball right around the world.

In 2010, the FIVB pledged to invest more in development both financially and in terms of resources. A ground-breaking development fund, controlled by the FIVB, was launched to work in line with the IOC's Olympic Solidarity program where all FIVB national federations have the opportunity to propose projects for funding through their Continental Confederations.

Today and tomorrow

The FIVB consists of 220 affiliated Federations and governs, manages and promotes all forms of Volleyball and Beach Volleyball worldwide through tournaments such as the World Championships, World League, World Grand Prix, World Cup, Grand Champions Cup, Club World Championships, SWATCH FIVB World Tour, SWATCH FIVB World Championships, Continental Beach Volleyball Cup and Beach Volleyball World Cup, Junior and Youth tournaments and, of course, the Olympic Games.

History of Volleyball

History

William G. Morgan (1870-1942), who was born in the State of New York, has gone down in history as the inventor of the game of Volleyball, to which he originally gave the name "Mintonette".

The young Morgan carried out his undergraduate studies at the Springfield College of the YMCA (Young Men's Christian Association) where he met James Naismith who, in 1891, had invented basketball. After graduating, Morgan spent his first year at the Auburn (Maine) YMCA after which, during the summer of 1895, he moved to the YMCA at Holyoke (Massachusetts) where he became Director of Physical Education. In this role he had the opportunity to establish, develop and direct a vast programme of exercises and sport classes for male adults.

His leadership was enthusiastically accepted, and his classes grew in numbers. He came to realise that he needed a certain type of competitive recreational game in order to vary his programme. Basketball, a sport that was beginning to develop, seemed to suit young people, but it was necessary to find a less violent and less intense alternative for the older members.

At that time Morgan knew of no similar game to Volleyball which could guide him; he developed it from his own sports training methods and his practical experience in the YMCA gymnasium. Describing his first experiments he said, "In search of an appropriate game, tennis occurred to me, but this required rackets, balls, a net and other equipment, so it was eliminated, but the idea of a net seemed a good one. We raised it to a height of about 6 feet, 6 inches (1.98 metres) from the ground, just above the head of an average man. We needed a ball and among those we tried was a basketball bladder, but this was too light and too slow. We therefore tried the basketball itself, which was too big and too heavy."

In the end, Morgan asked the firm of A.G. Spalding & Bros. to make a ball, which they did at their factory near Chicopee, in Massachusetts. The result was satisfactory: the ball was leather-covered, with a rubber inner tube, its circumference was not less than 25 and not more than 27 inches (63.5 cm and 68.6 cm, respectively), and its weight not less than 9 and not more than 12 ounces (252 gr and 336 gr, respectively).

Morgan asked two of his friends from Holyoke, Dr. Frank Wood and John Lynch, to draw up (based on his suggestions) the basic concepts of the game together with the first 10 rules.

Early in 1896 a conference was organized at the YMCA College in Springfield, bringing together all the YMCA Directors of Physical Education. Dr. Luther Halsey Gulick, director of the professional physical education training school (and also

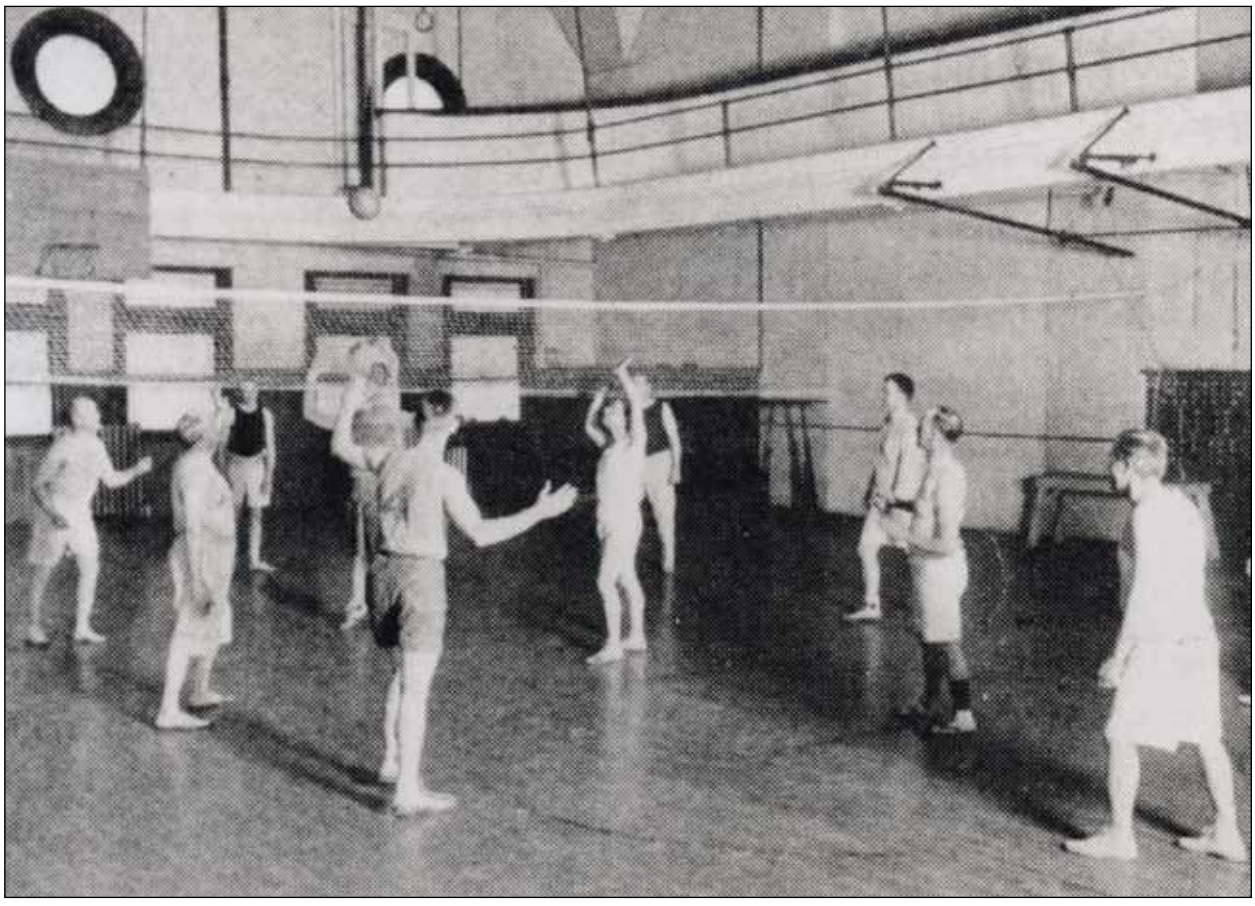
executive director of the department of physical education of the International Committee of YMCA's) invited Morgan to make a demonstration of his game in the new college stadium. Morgan took two teams, each made up of five men (and some loyal fans) to Springfield, where the demonstration was made before the conference delegates in the east gymnasium. The captain of one of the teams was J.J. Curran and of the other John Lynch who were respectively, mayor and chief of the fire brigade of Holyoke.

Morgan explained that the new game was designed for gymnasia or exercise halls, but could also be played in open air. An unlimited number of players could participate, the object of the game being to keep the ball in movement over a high net, from one side to the other.

After seeing the demonstration, and hearing the explanation of Morgan, Professor Alfred T. Halstead called attention to the action, or the act phase, of the ball's flight, and proposed that the name "Mintonette" be replaced by "Volley Ball." This name was accepted by Morgan and the conference. (It is interesting to note that the same name has survived over the years, with one slight alteration: in 1952, the Administrative Committee of the USVBA voted to spell the name with one word, "Volleyball", but continued to use USVBA to signify United States Volleyball Association).

Mr Morgan explained the rules and worked on them, then gave a hand-written copy to the conference of YMCA directors of physical education, as a guide for the use and development of the game. A committee was appointed to study the rules and produce suggestions for the game's promotion and teaching.

A brief report on the new game and its rules was published in the July 1896 edition of "Physical Education" and the rules were included in the 1897 edition of the first official handbook of the North American YMCA Athletic League.



Worldwide growth

The physical education directors of the YMCA, encouraged particularly by two professional schools of physical education, Springfield college in Massachusetts and George Williams College in Chicago (now at Downers Grove, Illinois), adopted Volleyball in all its societies throughout the United States, Canada (in 1900 Canada became the first foreign country to adopt the game), and also in many other countries: Elwood S. Brown in the Philippines (1910), J. Howard Crocker in China, Franklin H. Brown in Japan (1908), Dr. J.H. Gray in Burma, in China and in India, and others in Mexico and South American, European and African countries.

By 1913 the development of Volleyball on the Asian continent was assured as, in that year, the game was included in the programme of the first Far-Eastern Games, organized in Manila. It should be noted that, for a long time, Volleyball was played in Asia according to the "Brown" rules which, among other things, used 16 players (to enable a greater participation in matches).

An indication of the growth of Volleyball in the United States is given in an article published in 1916 in the Spalding Volleyball Guide and written by Robert C. Cubbon. In that article Cubbon estimated that the number of players had reached a total of 200,000 people subdivided in the following way: in the YMCA (boys, young men, and older men) 70,000, in the YWCA (girls and women) 50,000, in schools (boys and girls) 25,000 and in colleges (young men) 10,000.

In 1916, the YMCA managed to induce the powerful National Collegiate Athletic Association (NCAA) to publish its rules and a series of articles, contributing to the rapid growth of Volleyball among young college students. In 1918 the number of players per team was limited to six, and in 1922 the maximum number of authorized contacts with the ball was fixed at three.

Until the early 1930s Volleyball was for the most part a game of leisure and recreation, and there were only a few international activities and competitions. There were different rules of the game in the various parts of the world; however, national championships were played in many countries (for instance, in Eastern Europe where the level of play had reached a remarkable standard). Volleyball thus became more and more a competitive sport with high physical and technical performance.

Chapter II

FIVB Coaches Course System

by Mr. Yuri Chesnokov, former President of Coaches Commission (1933 - 2009)

In general, the ultimate end of any FIVB activity is a creation of the Volleyball "product". In other words, it means a preparation of the very attractive sports show which in form and in content offers to spectators and TV viewers the real thrilling fight over the net.

Keep the ball flying! This is the FIVB slogan which reflects the main sense of our game.

From the sports point of view the "product" is the high quality of the players and teams competitive performance.

The main figure and very often just the single person who is in charge of such performances and results is the coach. This is why the problem of the coaches' practical work and an improvement in the standard of their knowledge is one of the special concerns of the FIVB.

Needless to say these questions mainly have to be resolved in a frame of each National Federation by means of their own educational system: University, High School sports, Institutions, Volleyball Schools, national courses, seminars, an edition of the methodical materials etc.

But all of this is activity on the national level only and often it is very limited.
In order to introduce advanced methods of the coaches' preparation and education on the global level, the FIVB has created its own system. To represent it there is a necessity to cover the following 5 main points.

FIVB Coaches Courses

These are the core of the FIVB educational idea and consist of three degrees:

Level I	92 working hours 12 days of duration
Level II	94 working hours 13 days of duration
Level III	56 working hours 7 days of duration.

Each of the levels has its own 'philosophy.' The main Volleyball contents include *How to play* (Level I), *How to teach* (Level II) and *How to coach* (Level III). The program at every Level reflects each of these main ideas.

It should be mentioned that the Level III Courses are the top of the FIVB educational system – "academic courses" – aimed at bringing the latest ideas of contemporary Volleyball and its innovations to the coaches of leading clubs and national teams as well as to the best FIVB instructors.

Usually FIVB organizes about 30 courses with almost 1000 participants yearly.

The special Volleyball Cooperation Program courses are aimed at providing regular Volleyball activities to a new generation of young people and have to be added to the general scheme of the FIVB courses.

The unique feature of the FIVB Coaches courses is that they are organised specifically for those involved in the sport of Volleyball – coaches, instructors, school teachers, players. Each course participant can find his own strictly-practical interests or/and general subjects.

All questions concerning an organization of the courses, any formalities and procedures like:
- Program and working hours distribution
- Conditions and criteria
- Practical and written exams
- Attestations and certificates received are specified in the Operational Manual for the FIVB instructors. They have to be presented to the participants by the Course Director and can be a subject for the Questions/ Answers sessions during a course.

There are three main sponsors to support financially the FIVB Coaches Courses – FIVB, Olympic Solidarity (OS) and National Federations involved (NF).

Technical seminars

Some of the National Federations have requested the practical help in certain playing actions: setters, centre

blocking, jump serves and receptions, defensive tactics, Libero's play etc.

To satisfy such concrete practical needs the FIVB has organised Technical seminars. World famous coaches with their best players go to the NF involved and during 5-6 days deliver on all aspects by lessons, demonstrations, joint trainings and discussions together with national coaches and players.

There is no doubt that this special FIVB activity will be very useful and popular in the future.

Special Projects

Under the leadership of the President Wei, FIVB determines the most weak and painful spots on the World Volleyball map.

Scrupulous analysis forces the FIVB to create the Special Projects aiming to improve some concrete situations. Sometimes the projects are general for example 'Increasing of the Asian teams' performance' or 'African women's teams.' Sometimes they are specific including 'National teams 2001' or 'National teams for the World Championship 2002.'

As the best example of the Special Project's realization there is a sense to mention 'Increasing of the Asian teams' performance' held in Japan, China and Korea in 2001 with 300 participants and the outstanding coaches involved – Beal,
Velasco, Alberda.

Now FIVB elaborates the global project – "World Volleyball Vision in 2012".

The different Special Projects will be included in the general FIVB idea.

FIVB Instructors

All mentioned, FIVB activities – Coaches Courses, Technical seminars, special Projects etc – are managed by the FIVB Instructors. They are the most competent Volleyball experts, the best working coaches and world famous specialists.

To mention just some of them:

– Herrera, Samuel Blackwoods	Cuba
– Beal, Neville	USA
– Velasco, Montali	Italy
– Alberda, Gerbrands	Nederland
– Parshin	Russia
– Blain	France
– Rusek, Skorek	Poland
– Jetchev	Bulgaria
– Ejem	Czech Republic

Now there are about 125 active FIVB instructors, which represent all Confederations.

The nominations of the new FIVB instructors will be held each even year in accordance with the practical needs of the FIVB programs realisation.

Any information about FIVB instructors' participation, nomination and increased level, is specified in the Operation Manual for FIVB instructors.

Educational materials

FIVB has its own educational materials, mainly the following three text-books:
– VCP Manual for FIVB instructors
– Coaches Manual I
– Coaches Digest.

The contents of each of these text-books reflect the main topics of the respective Program of the Course – VCP, Level I and Level II.

Besides that, the FIVB can offer video-cassettes, posters, slides and technical films, the list of which is at any Course participant's disposal.

One of the main concerns is to update all educational materials permanently.

All necessary details and explanations have to be done by the FIVB instructors during a Course itself.

Chapter III

Nature of Volleyball as a Team Sport

by Mr. Doug Beal, CEO USA Volleyball & former Head Coach of USA mens team

The nature of Volleyball must be understood before we can begin to analyze systems, theory, tactics and coaching methods in our sport. Volleyball has many characteristics which are unique unto itself and the coach must immerse himself in the nature of the game so that he may be better adapt to the particular strategies and tactics for successful play. Volleyball is characterized by the following elements:

Volleyball is a rebound sport

This implies there is no possession of the ball by the players with the exception of serving. The coach must constantly be concerned with training players to be in position to return the ball. The coach must be concerned with contact points on the players' bodies and players' positions to most efficiently return the ball. In most other games, athletes possess the ball and run while holding it. They compensate for poor body position by the act of possession. Strength overcomes poor movement skills. In Volleyball we must work very hard to position our bodies correctly before returning the ball.

Most ball contact in Volleyball is intermediate.

There is no final contact therefore ball control is essential. Co-operation and teamwork are vital. Once the ball is put into play only the final attack counts. Because success depends on the interrelationship and co-operation among players, these qualities dominate coaching strategy and tactical theory. And because of the overwhelming number of intermediate contacts, the term "ball control" dominates coaching thought.

Volleyball has a high concentration (ratio) of people to the size of the playing field.

We have a very congested, very dense playing area and, therefore, we need to consider the organization of players, the organization of movements, the flow of players and what we call balancing the court or covering the court. The relationship of players who are next to each other in rotation becomes critical. The interrelationship of who plays next to who becomes a prime coaching concern.

Volleyball offers relatively little positive feedback.

The fact that there is relatively little feedback, particularly instantaneous positive feedback, presents some difficulty in the learning process. One of key elements of motor learning is the immediate reward or positive feedback. In Volleyball it is difficult for youngsters to understand where this positive feedback is except with service aces or attack kills. All other contact tends to be intermediate and not positive in reinforcing capabilities particularly in the area of defence. Blocking and back row recovery skills require great creativity by the coaches to achieve high performance. This is why players tend to learn serving before passing and offensive skills and before defensive skills.

In Volleyball the traditional roles of offence and defence are reversed.

In Volleyball offence prevents points from being scored; you merely achieve possession of the ball when your offence is successful. With defence, we are attempting to score points. Volleyball can handicap the traditionally aggressive offence as this produces many unforced errors and loses many points. Conversely, conservation defence, which simply waiting for the opponent to make a mistake, is not likely to produce success in Volleyball. In Volleyball defence, we want to be aggressive and create opportunities to score points. The coach must understand this reversal and integrate these concepts into training and tactical presentations early in the development of his players.

Volleyball is noticeably imbalanced between offence and defence.

In spite of changes made by the FIVB Rules of the Game Commission in an attempt to narrow the gap, this imbalance stays noticeable. Perhaps more than any other team sport in the world, Volleyball offence has a visible advantage, and, in some ways, this negates the reversal of normal offence and defence roles which are structurally presented by the rules. In recent years, FIVB has introduced two important changes in the rules of

the game in order to balance disproportions between offence and defence:

- the possibility of more than one touch of a ball after attack or service of opponent team
- introduction of LIBERO

These two changes allow keeping the ball in game thanks to which Volleyball became more attractive although the dominance of offence is still noticeable.

Volleyball is a team sport with a physical barrier preventing most direct one-to-one physical contact.

The players are in control of their own game and, in many respects, they control their success or failure regardless of the opposition's level or action. The coach must train his players to determine the level of skill which will allow them success regardless of how strong or weak their opponent is. This carries over to the type of athletes who gravitate to Volleyball. They tend to deal with frustration and aggression differently from athletes in other team sports where body contact releases frustration and moderates the highs and lows of performance. The coach must train the Volleyball athlete, in addition to competing with the opponent, to play within himself, to compete against himself, and to meet the standards he sets for himself.

Volleyball presents no time limit.

Therefore, the game is always won by the victorious team. The last point must be scored. A large lead can easily be lost, thus the coach must train his team to actively "win" the game as opposed to waiting for the opponent to "lose" the game. Momentum is critical in Volleyball and will quickly and easily shift from team to team. In Volleyball it is difficult to win the game by depending on the opponent's lack-of-play versus your own strong performance. There is constant pressure to score points.

Volleyball is a player-dominated game more than any other team sport in the world.

This is opposed to coach-dominated games where the coach has a stronger, direct influence during the actual play of the game. The contact allowed by the coach in Volleyball is very restrictive. Therefore, the coach must do most of his work before the teams enter the playing area. He has less opportunity to adjust and interact than in other traditional sports. The players must be trained to react to situations and make tactical changes independently.

Ball contact on the forearms in the underhand pass is unique to Volleyball.

This is unusual as the ball traditionally is contacted by the hands in most sports. It can be compared to sports that use racquets or sticks even though none is used in Volleyball. Eye and hand co-ordination is very unusual in this particular skill just as it is for players in soccer and football who use their chests to control the ball.

Volleyball rules require player rotation.

This means Volleyball is dominated by the idea that players must be equally adept in all phases of the game. A team with six starting players equal in all respects has been a goal for many years. The exception constitutes the position of LIBERO, who can play only on positions 1,6,5 and with no right of service. His basic function is the proper reception of a service as well as organization and enforcement of defence. The coach must use rules effectively to train his players to be familiar with all areas of the court, to be equally comfortable in the front row as well as the back. In the learning phase, the rotation concept is perhaps the most dominant rule with which young players must become familiar. Another element that rotation dictates to Volleyball has to do with coaching adaptations in practice. We believe that since the universal player is 'the ideal,' we must spend time training players in all Volleyball skills. This becomes virtually an impossibility in real-world situations. There simply are not enough hours in the day to train all players equally well in all Volleyball skills. The coach's role, relative to rotation, is to work within the rules to build in specialization and overcome the idea of the universal player. This is consistent with all sports for achieving success. Greater specialization always equals greater success.

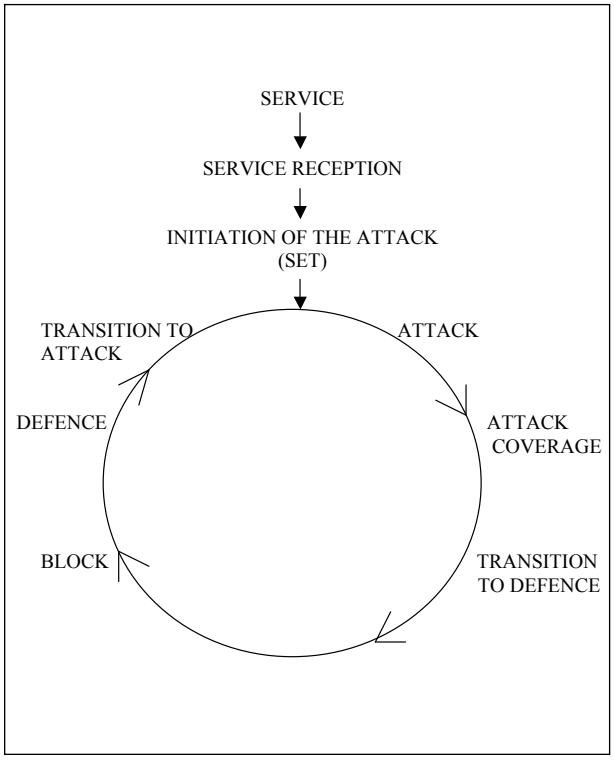
In Volleyball, moving skills are somewhat complex.

We move in every direction by diving, rolling, running, shuffling, side-stepping, cross-stepping and other movement combinations. The coach works with his players until these skills are second nature to them.

Zone of Play

In Volleyball there are two unique zones of play. Most sports are played in the mid-zone which is the area between the top of the head and the knees. Volleyball has two zones which are outside the mid-zone – the low-zone and the high-zone. The low-zone is between the knees and the floor. Players are trained to be comfortable on the floor using such skills as diving, rolling and flying recovery techniques which are standard in Volleyball. The high zone is the topmost reach of the players (a point 3.50 or more meters above the floor). Much of Volleyball is played in the high-zone, therefore Volleyball players are trained to jump more than athletes of any other sport.

VOLLEYBALL FOLLOWS A CYCLIC AND SEQUENTIAL PATTERN SIMILAR TO THE ONE LISTED BELOW:



The mentality or psychological condition of a player is one of his basic values. Introduction of the "rally point system," apart from keeping the audience in a constant suspense, forces the players on the court to take responsibility for their effective actions throughout the whole match. In consequence, the coaches while selecting the players should pay attention not only to their motor and physical capabilities but also to their psychological characteristics. Stable resistance to stress, capability to take responsibility for effectiveness of each action during the whole match and especially at the end of the set, become the imperative values.

Key Volleyball Coaching Concepts

As we develop an understanding of Volleyball, it is important for us, as coaches, to relate to the elemental nature of our sport. The following are concepts which make coaches successful:

Strong teams are based on six basic building blocks:

1. Physical characteristics (size, agility, speed, strength, power).
2. Team tactics supported by technical expertise and level of players.
3. Level of team experience.
4. Mental agility, shifting tactics and strategy (team sophistication).
5. Team work characteristics, team members complement and co-operate with each other.
6. Team's coaching strength.

Each movement and contact is Volleyball is part of an unbroken chain.

Players who perceive it this way contribute to a strong team more effectively than players who perceive their actions and movement as independent and separate from team patterns.

The player's role in any contact is to "better the ball."

Regardless of previous contact, each player must strive to create a more advantageous situation for the next contact.

Volleyball combinations are infinite:

The number of positions from which plays can be run, the number of court areas that must be defended, the positions for blockers, the combinations of players - all of these elements are infinite in Volleyball and we can never prepare for every situation.

Volleyball is dominated by movement before contact and player movement between contacts.

We cannot make up for poor movement with strength or by holding the ball. Our ability to effectively control the ball and to "volley" the ball depends on movement.

Volleyball is really six distinct games within one game.

Each rotation presents a different team and a different set of criteria to the players. To be successful in the total game, we, as coaches, must see it from the rotation point of view.

We must consider the individual match-ups

within each rotation and we must match our strength against opponent weaknesses.

Tactically we must emphasize team strengths and cover up team weaknesses.

This is the key to specialization.

Players must be trained to compete with themselves.

They must be coached and pushed to be the best players they can be. If they are content merely to be the best on their team or better than the opponent, they will eventually fail.

Players must be trained to consider each contact they make with the ball as the most important one they will make in the game.

Once it is accomplished, they must forget about it and concern themselves only with the next contact. The ability to focus on the immediate play is the best guarantee of success, the best guarantee of attention to the task at hand, and creates the most beneficial environment for team cohesion and co-operation toward a common goal.

Each player on the team must have a specific and critical role in team strategy and tactical outline.

Players must understand their roles and the roles must fit their technical abilities. You can never expect a player to perform within a tactical construct outside his technical capabilities.

The Six "T's" of Volleyball

Teaching
Techniques
Theory
Tactics
Team Work
Training

Definitions

Systems:

The various methods of developing individuals on the playing surface.

Systems can involve serve-receive patterns, offensive manoeuvres, setter movement, spiker coverage positions, blocking alignments, back court defensive positions etc. Any alignment of players which we can codify and describe a system of play in Volleyball.

Tactics:

The application of specific systems to match the strengths of the players of your team. As we have already discussed, tactics can never be more complex than, or exceed, the technical abilities of your players in the six basic individual skills. Tactics is further defined as the coach's decision to use those systems which will most effectively take advantage of the player's strengths and cover up the player's weaknesses. One of the most important elements to understand about tactics is that their development is based totally on the abilities of your team, and on those systems which you feel are best suited to the particular individuals you are coaching.

Strategy:

The application of tactics to the specific opponent you are playing.

When we develop a strategy we are picking and choosing from a broad range of tactics which the team has mastered. We chose those elements which will be successful because of particular "match-ups" we can predict will occur against the opponent. For example, we have certain hitters matched against certain blockers. This is within the tactics for which our team has trained. This is defined as "strategy." You develop a serving strategy within the team's general tactical serving plan which should take advantage of the opponent's receiving weaknesses. You develop a particular blocking strategy, within the menu of available tactics that your team has mastered, which will be most effective in defending a particular opponent's offence. Your strategy should vary from opponent to opponent, even, from game to game. Strategy always involves a rotational decision which will be the most effective in giving you more successful match-ups than unsuccessful ones against a particular opponent.

Coaching:

The decision-making processes which are imposed upon the team to effectively select the strategies for a particular opponent, to effectively select the tactics that will be developed during the training period, and to integrate the available components into a cohesive unit. The effective coach will maximise the individuals, the individual skills and the individual tactics available so that he develops "the whole which is greater than the sum of its individual parts." If the coach does this he is judged to be successful.

Team competition and team tactics

In general, coaches can either develop players and find tactics which fit their abilities or mould players to fit specific tactics. There is no question that the vast majority of coaches prefer to develop player' abilities and then select those tactics which best take advantage of players' skills. However, there is an element which must be considered in dealing with this common coaching dilemma.

Coaches must understand their own strengths and weaknesses long before they can effectively deal with those of the players. Coaches train players and transmit information to them in certain parts of the game more effectively than in other parts. All coaches feel more comfortable when their team uses tactics with which they have a strong fundamental knowledge, than when they use tactics with which the coach is less familiar.

The point here is that some modification must be made in the blanket statement that "tactics must always fit the players' abilities." We must modify this theory in order for the coach to effectively take advantage of his own skills and his own abilities to affect the result of the match or the set. You must coach in a comfortable environment. This implies a certain set of tactical considerations versus another set of tactical considerations.

One consideration must be that players should be selected who are more apt to fit into tactics the coach prefers to use with his team. We commonly talk about coaches who favour a certain kind of player over another. The coach's style is most important for ultimate success. While we must never force a player to do something tactically

that he is incapable of doing technically, we must also be careful not to force the coach to use a tactic simply because it is the best for his team. He may not make maximum use of the tactic or strategically select it at the most opportune time. So there is some balance to the general rule of the tactics fitting the ability of the players.

Team composition

It is important for the coach to understand that each player on the team must have a specific role. Communication between coach and player is critical relative to the player understanding his or her role on the team. The player must accept the role, feel comfortable with it, and feel confident that the coach will, in fact, use him or her consistently whenever that role is required regardless if the player is the best or the poorest on the team.

In selecting the team, the coach must keep in mind the systems most likely to be used and the players chosen with those specific systems in mind. The "twelve best players" are never chosen because the "twelve best players" will never make the best team. We select players who fit specific roles within the squad of twelve (players who can accept the role of substitute, players who can accept the role of specialist). Players, willing to subjugate their egos for the good of the team, are more valuable than those better players who may not be starting players and who will destroy the internal fabric of team cohesion.

Generally we look for nine potential starters – two plus libero who will not start, but who will replace, by position, the six starters. The balance of the squad is made up of specialists who have one or two outstanding skills which have the capability to directly score points, to change momentum or, to prevent the opponent from gaining momentum. For example, an outstanding back court substitute who is also an outstanding server can be tremendously valuable. A particularly strong front court player can also be counted on for a string of successful side-outs. It is very important for the coach to consider systems and tactics to be used before he selects the final squad.

Developing a top class team

Historically, the development of a top class Volleyball team has taken a long time. There are, however, several exceptions, particularly, the USA Men's Team which captured the gold medal in Los Angeles in 1984. There are several keys to developing successful teams:

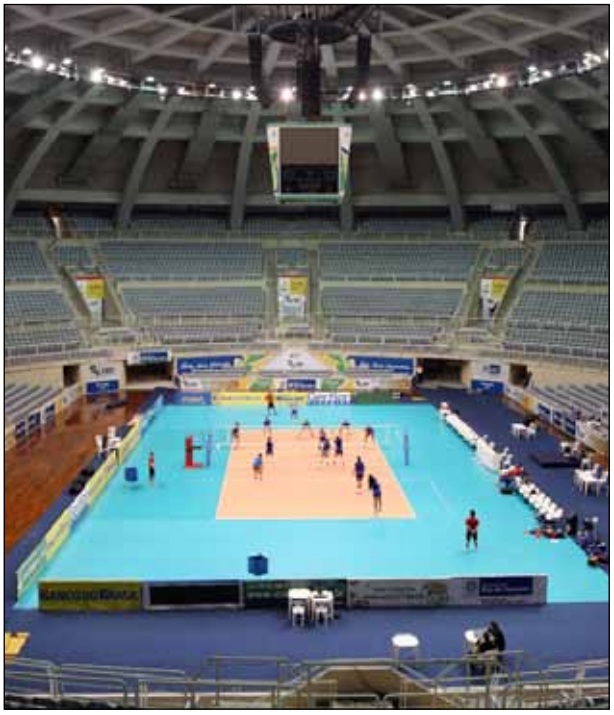
The first is to choose the best athletes available, and to train them to take advantage of their abilities.

The second key is to create a very specialized tactical system which takes maximum advantage of the players' abilities. Specialization is most likely the key. A team can be developed quickly by concentrating on a few elements of the game rather than by trying to develop a broad base of all the elements.

Specialization shortens the road to success, but it is hazardous because you are depending on a narrow set of skills rather than a broad-based foundation.

The third key is to gain as much experience as possible. A minimum of sixty international matches per year is necessary to achieve success in a short period of time.

The fourth key is to develop the newest tactical approach. Sports always follow the lead of new developments. It takes at least three years to catch up to these new ideas and developments.



Flexibility of systems

To reach the very top level, teams must be adaptable. They must have a basic foundation of play with which they are familiar and, in general, will use against most opponents. The teams who reach the top can change their systems with subtle shifts to take advantage of specific weaknesses of their opponent. They also are able to change so the opponents cannot exactly expect the same tactical presentation match after match.

Your team might change attacks from combination plays in position "4" to combination plays in position "2" or change combination plays which move from right to left to combination plays which go from left to right. You may choose to change blocking tactics or defensive systems. It is important for your team to develop capabilities of adjusting to various opponents and match situations. The best teams are the most flexible.

Scouting your opponents

The importance of scouting increases as your team's ability gets higher. At the lower levels, coaches are 95 percent concerned with how their own teams perform and only 5 percent with adjustments that might be made to defend against the opponent's strength and performance. As your team gets better this ratio changes so by the time your team reaches the very top level, approximately 30 to 40 percent of your preparation is directed at the specific tactics you expect your opponent to show. This involves extensive scouting from both a statistical and a general empirical point of view.

Statistical evaluation

To gather complete information on your opponent, it is helpful to have statistical data regarding all performances on each skill by each of their players. This material should be combined with empirical observation and the rotational data given in the preceding section to form the scouting report and complete a game plan which will be used to make strategy decisions for your match.

Time preparation

The special preparation that must be given to a team takes many forms. In general, for your team to be prepared in the best way to win at the top level, it must train under conditions closely reflecting competition. This may involve many factors and is called "Specificity of Training."

a. General area surroundings
b. Floor surface
c. Lighting conditions
d. Practice at the same time of day as important match
e. Make practices intensely competitive
f. Place positive and negative consequences as the result of all drills and competitions in practice
g. To give players the most confidence possible, emphasize those areas in practice which they will most likely perform during the game and, also, those areas they are most successful in performing technically
h. Have the team practice the same tactics they will use in the match
i. Use a real referee to simulate real game conditions
j. You must physically prepare your team by tapering off their work load slightly so they will be fresh and recovered when they play the important competition. A very light activity load on the day of the match is recommended, but the day before should have no physical activity.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Chapter IV

The Role of the Coach

by Mr. Yuri Chesnokov, former president of Coaches Commission (1933 - 2010)

Understanding the Coach's role, their responsibilities, duties and moral norms are very important for the perfecting and the development of Volleyball in general, as well as for improving the technical-tactical skills and results of the players and teams as a whole.

The official FIVB statistics states:

There are over 500 million people participating in organized Volleyball and beach volley-ball.

Organized Volleyball means – regular training and participation in any competition. It can be realised only under the leadership of the coach (a Volleyball instructor, a school teacher, a physical education tutor). There can be school teams, university or college teams, beach volley pairs, national teams, club teams and children's teams.

The role, the responsibilities, the duties and the level of mastery of these groups of coaches differ greatly.

If we assume that one coach is working with a group of 25 players it means there is an active army of 10 million coaches.

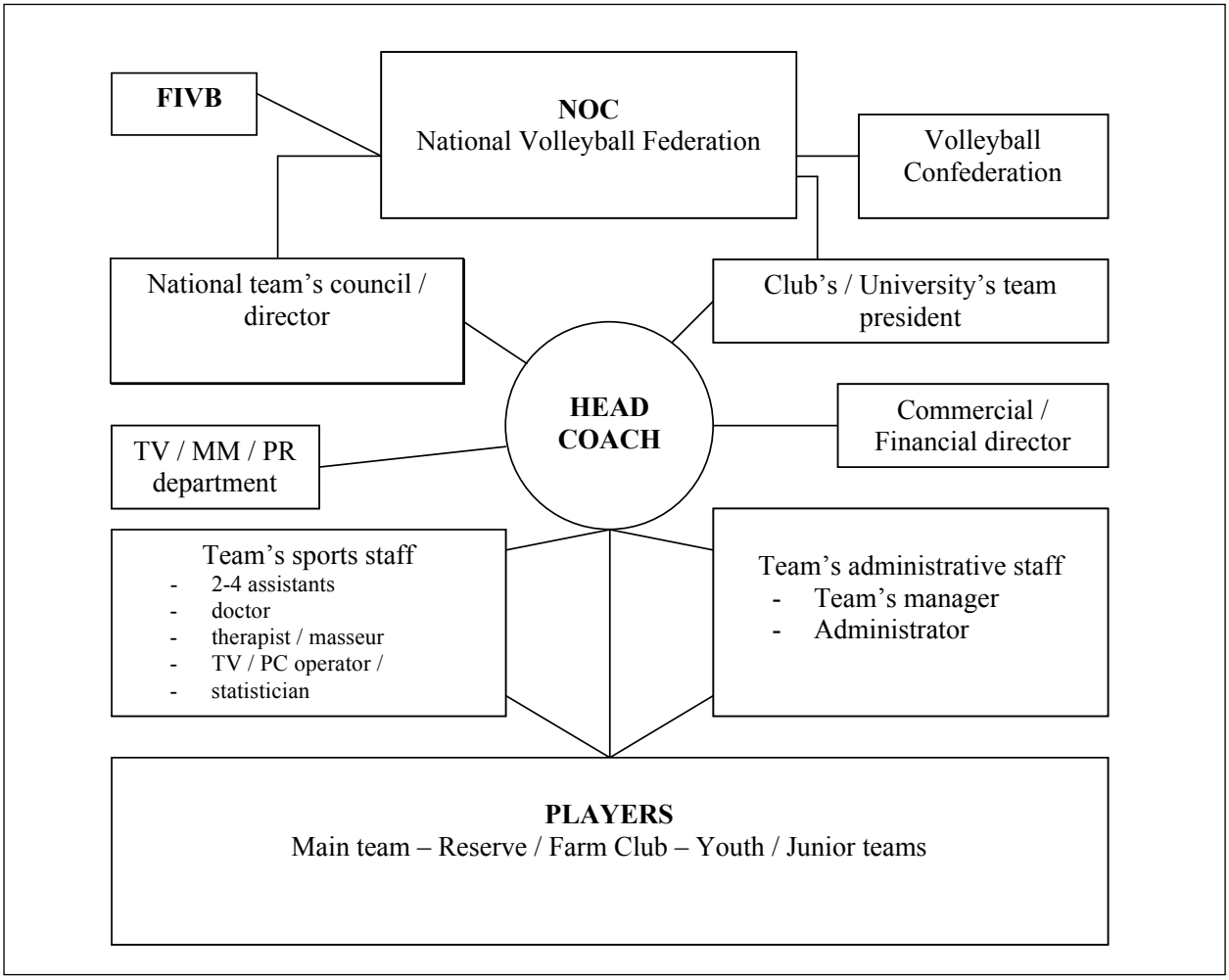
Within the framework of this lesson it is practically impossible to, even partially, touch upon all main problems about the coach's role.

This is why the only key-points will be stated.

What are the coach's main roles and functions?

Two following diagrams will help to answer these questions.

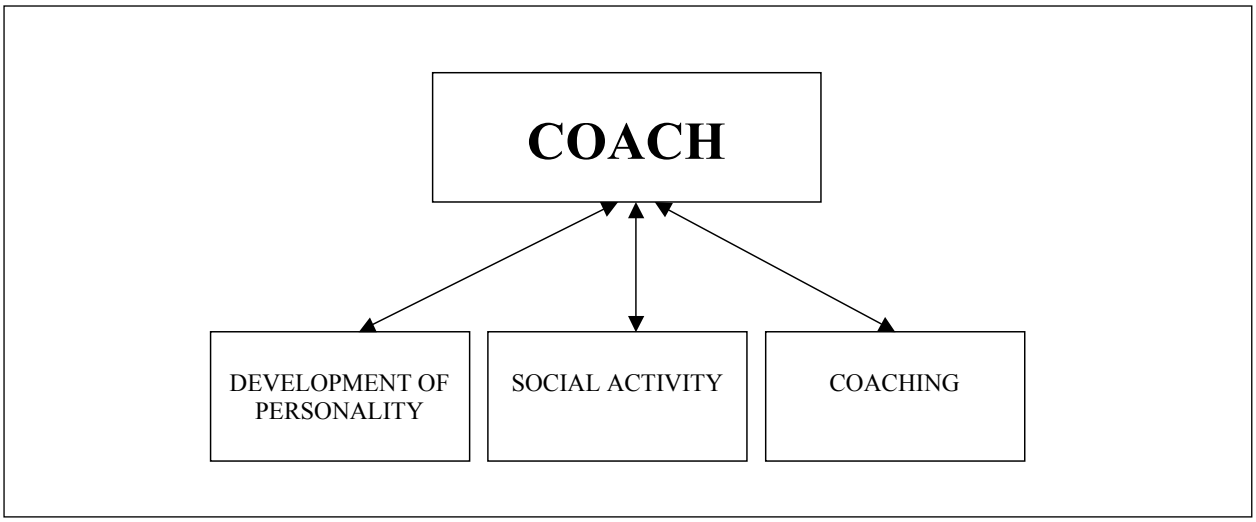
The coach's place in the team's management



This first diagram is a very general one. In each concrete case, in any country, in any team, a scheme and any interactions can be altered.

For instance, in children's / colleges teams only one coach and the doctor are needed. On the contrary, for a national team a large amount of staff is desirable.

The second diagram will specify the main directions of coach's work.



Certainly all these functions are closely interconnected and interrelated. The differences between these functions are often obscure.

Now let's try to answer the question, *What is a coach?* Looking at these diagrams, one can say:

A coach is a teacher and an educator. This is correct especially for a coach who is working with children and Youth/ Junior teams.

A coach is a sport specialist. He works on the development and popularity of Volleyball in his own country, in a club, in a university, etc...

A coach is an organizer. One of his main duties is coordinating the work of all his assistants by keeping in touch with management and the national federation.

These above-mentioned definitions of coach's role are true.

But taking, as a basis, the major task and the most essential sign which is the preparation of the team and the achievement of result the correct definition of *'what is a coach'* may be the following:

The coach is a professional head of a team who is responsible for the preparation and performance of single players and of a team as a whole.
A coach is a person who is responsible for the result.

Of course it must be said that this definition is correct for coaches of average and high level teams. The specific feature of the coaches' work consists of the following circumstances: in comparison with other leaders of small groups of twenty-five to thirty people, a coach is a leader who must answer two questions:

1. **"What is he to do?"** This defines the main goal and those problems which must be solved in order to get the result. This means an analysis of the whole activity of a coach.

2. **"How is he to do his work?"** These are the means and methods which help in solving training problems in order to get the results. This means the individual mastery of a coach, his creative work.

A coach's main functions

1. Development of personality :

This task is very important in the coach's work. The problems of development cannot be put within the framework of one team. A coach deals with young people – very often with school children. Usually, they work together from eight to ten years. The coach's influence on the moulding of young players' characters is very often more than in school or in the family. In general, the coach partly decides the question of the development of the whole generation of our future. What can be more important and crucial than this task?

Here are the main aspects of the coach's development of personality work:

- Moulding of character (from the psychological point of view)
- Courage: strong will, persistence
- Moral qualities of the personality
- Patriotism and devotion to the country and to the team
- Fair play, sport honesty

The question of developing the personality is a special topic. In our discussion we need not dwell upon details of pedagogues, but I would like to make some important remarks about the coach's work in this respect.

1. The process of the development of a player as a personality and a citizen is not any different from the general process of a team's work. It is absurd to say that from ten until twelve a coach teaches tactics and techniques, and from four until six he develops patriotism and honesty in his players. On the contrary, the process of development progresses with the help of sport, with the aid of sport training, through the permanent practical work of a coach and the activity of the whole collective.

   Each of the coach's words, his jests, every training team meeting, is an act of development.

   - From a pedagogical point of view, the process of development is realized through the following system :

     Educator (coach) – group (team) – pupil (player)

     It is very important that the team fulfils its development functions.

   - It is very absolutely necessary that a coach, as an educator, should be well brought up and educated himself. His appearance, behaviour, actions and decisions must be an example. There is a saying. "Personal example is the best teacher".

2. Social function (social activity of a coach):

The great social role of sports in the modern world is well known to us. Sports are one of the big social phenomena. This is enhanced by the fact that sport is a sphere of knowledge, development and improvement of the man himself, his physical and psychological qualities. Sport is practically the only means of strengthening one's health.

Sport is practically the only means to save the young generation from the deadly invasion of narcotics, alcohol ism, AIDS.

Now days Sport, in general, is in the phase of the universal globalisation. Sport has no equal in the number of people involved – athletes, fans, T.V. and MM. Sponsors and Companies.

Sport is a policy, financial successes, the national idea on the winner's pedestal.

FIVB is one of the leading sports international organisation in the general social activities.

Just "no comments" facts will confirm this statement:

- 250 000 000 Volleyball players
- 220 National Federations affiliated
- (FIVB is the most large international sports federation)
- 4 sets of Olympic medals –VB and beach volley (all other team's sports have only 2 completes of the Olympic medals)
- annual commercial competitions for the best national teams including, the million's prize money for teams and best players (World League, Grand Prix, Beach volley world championship), annual development PROGRAMS and PROJECTS for coaches, referees, managers etc.
- Volleyball for everybody and forever:
  - Volleyball (indoor)
  - Beach Volleyball
  - Mini Volleyball
  - Park Volley
  - Veterans and disabled Volleyball

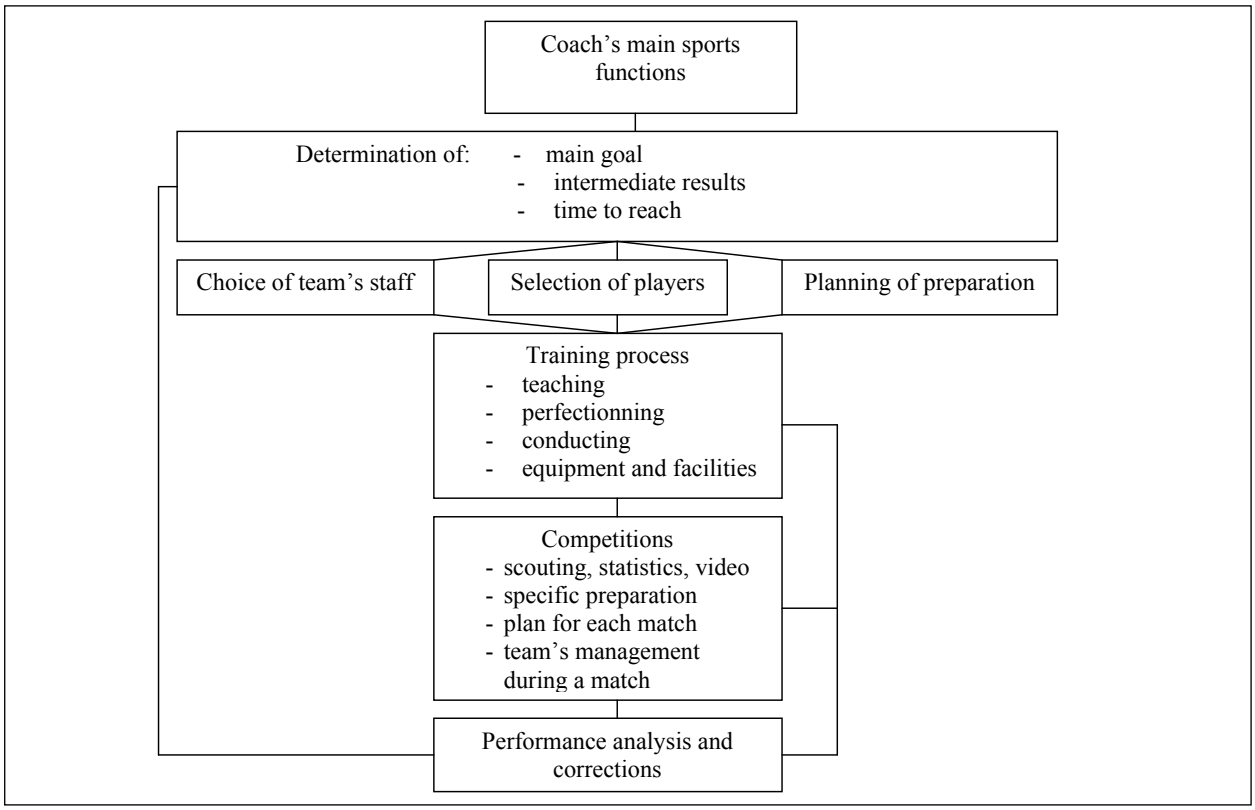
But all coaches need to understand a big importance of their social activates and not to pay attention only to technical – tactical aspects and to a team's performance.

In particular, each coach has to consider his close relations with television and mass media as one of the most important and essential part of his professional work.

Coaching team's preparation and management, is the most important and the most difficult function of the coach's work.

The major issues concerning these matters are included in the program of the course as separate topics.

So, there is a sense to present now the general schema of the coach's functions.



Comments:

The coach makes a decision while determining the main goal.

As a rule, the rank of his team is the result. In order to make the right decision he needs to make an objective analysis of the situation.

This analysis consists of:
- Tendencies in the development of the game.
- The time given to the coach to get the main goal.
- Establishing the intermediate result which gives the coach an opportunity to check the correctness of his decision.
- Correlation of the team's level, his own team and the main opponents.

A coach must be very active.

He must have the right to choose his assistants and players. It is very important that the coach should make sure his players hold the same views for they are the people who play a creative part in the development of major decisions.

Questions of planning, preparation and competition must be under constant objective analysis (statistics, medical examination, videotapes).

The modern facilities (VIS, own statistics, video-tapes, P.C. programs) give many possibilities to be completely informed about the modern Volleyball.

As the conclusion it is very useful to mention one very important remark.

Never accept any opinion and recommendation with blind eyes – even if it was done by the most famous Volleyball authority.

Never put into practice any idea or model of the team mechanically.

Never copy any style of play automatically.

Each lesson and article, any advice and experience, have to be very seriously analysed (preferable with players) and adapted creatively for the concrete team, players and conditions.

4.1 10 Tips for the Coach

by Mr. Yasutaka Matsudaira Japan

1. Prior to coaching players, a coach must have a basic doctrine or philosophy (hereafter, philosophy) about coaching. In particular, the basic philosophy of coaching beginners must involve steps and efforts in which the players learn that Volleyball is fun and enjoyable, not difficult, painful or mentally hard.

2. A coach must not place impossible skill targets on players but rather set many targets that can be relatively and easily achieved by anyone if they work hard. This will lead to beginners being surprised by their significant progress, which occurred without their notice.

3. No matter how small the target is, when it is achieved, the coach should be unstinting in encouraging the player with praise and enjoy the moment with the player. This attitude will shorten the distance between the beginner and the coach at once and build a sense of unity and relationship of trust between the coach and player.

4. When you scold even once in a while, make sure that you should not criticize everything the player is doing and that you should not be overly emotional. Your scolding must be formed around a belief in the beginners' abilities and future. For example, "You have the ability to do it as long as you try hard. Don't give up. Try again!" or "There is no way you would give up after something like that!" In this manner, your scolding needs to be encouraging the beginner.

5. Young beginners always have dreams. These could be becoming a start player or something that is very innocent. However, that is important because dreams and longings have power. Humans are able to draw forth courage, energy and motivation to overcome any difficult or sad period by pursuing their dreams.

6. To draw out these dreams in beginners, it is essential for a coach to provide them with opportunities to watch international matches of top level national teams and official matches of professional teams along with visiting the practices of such. Coaches must skilfully stimulate beginners and work to heighten their motivation.

7. It is important to adopt a "principle of competitiveness" to have the players learn, within practices and team compositions, the principal that different results must naturally come out from two types of players, i.e. ones who approach matters with earnest preparation and others that approach it with negligence.

8. The standard approach for improving skills of beginners is to first begin with players copying a good player. As the players mimic and practice they will soon naturally demonstrate a personality that matches their character, physique and rhythm. It is important to refrain from recklessly moulding this personality and character. It is this unique personality that is indispensable for beginners to posses in order to mature and succeed.

9. As a rule, practices for beginners should avoid exercise that places an enormous burden especially on the heart and lungs as the bodies of the players are still developing. The training should be focused more on agility of the players, in particular, drills such as well-skilled handling of the balls, rather than on stamina based training.

10. As for the training methods, it is vital to respect traditional methods, but it is most important for the coach to create his/ her own original and unique ideas as the training methods that are not a copy of others. This not only prevents practices from becoming simple habit or mannerisms but is also proof of the coach's expertise. Thus this becomes an important element for players to respect and trust their coach.

11. In particular, it is important for the coaches of beginner players to deal with their players in many ways: sometimes as an instructor for developing Volleyball skills, or as a parent, and other times as a sibling or friend. A coach must be a good advisor to all aspects of the beginner's personality.

12. The ultimate target of a coach is to guide his/her beginners to wonderful individuals who will be a part of a better society through Volleyball.

Chapter V

Volleyball for Beginners (Mini and Mass Volleyball)

by Prof. Hiroshi Toyoda, President of Technical Commission

1. Before Training

Before beginning training practice, the beginners' Volleyball coach should carefully check the following:

– Study the environment around the players
– Check the health of each player with medical examinations
– Evaluate the physical performances of each player
– Study players' mental attitudes and characteristics in keeping good human relations
– Know technical levels concerning fundamental individual playing patterns

Based on this data, the coach should then prepare the following items for players:

– Coaching programmes for beginners
– Facilities and equipment for practice and training (gymnasium, nets and courts, balls)
– Arrange teaching materials such as books, films, videos and training uniforms etc.
– Arrange teaching groups based on the skill level of each player
– Design coaching staff for each group for more effective coaching
– Financial conditions which should be presented to each beginner
– Prepare uniforms, shorts and shoes for each player

2. Coaching Procedures for Beginning Volleyball Fundamental Playing Patterns

a) Three steps to be introduced in sports coaching:

i) How to play – enjoy Volleyball introducing many ways to play (Motivation)
ii) How to teach – to give a feeling of success and improvement (Effort)
iii) How to win – to give many emotions through victory (Concentration)

b) Coaching Procedures for Beginners:

i)
– Preliminary training for individual playing patterns
– Familiarization with the ball, introducing ball handling training and games for beginners with movements
– Physical preparation and conditioning

ii)
– Introduction to initial game situations
– Underhand pass and fundamental postures
– Overhand pass
– Single hand pass and underhand service
– Lead-up games, initial game situations

iii)
- Introduction to the games with set-ups and spikes
- Set-ups
- Spikes
- Advanced services
- Introduction to games which use spikes

iv)
- Introduction to games with many rallies introducing blocking and receptions
- Spike receptions
- Service receptions
- Blockings
- Introduction to the games with all defensive plays

Table 1 is a sample of a coaching programme for Mini Volleyball beginners. The coaching programme and process for adult players should be the same as table 1 in considering the number of repetitions, training hours, intensity and frequency per week.

Table 1: Example of the Volleyball Training Schedule Process for Beginners (Half year plan)

Week	Subject and Content of Training
1st	Play with ball by one player
2nd	Play with ball(s) by two players
3rd	Underhand and single hand ball handling by one player
4th	Underhand pass moving in many directions and fundamental postures for back court players
5th	Underhand service and its service receptions
6th	Catching, throwing and passing games with underhand service
7th	2-to-2, 3-to-3 or 4-to-4 Mini Volleyball using mastered playing patterns
8th	Catching, throwing and ball handling for overhand pass
9th	Overhand pass moving in many directions
10th	Overhand pass games (running, side-stepping)
11th	Set-ups from the back court to the net
12th	Set-ups near the net (setter's training)
13th	Pass and set-up games by two or three players
14th	Spike training (arm swing, approach and take-off)
15th	Spike training (jump and push, quick spikes over the low net. Pass, set-up and spike games).
16th	Spike training (high set spikes, change the direction of spikes).
17th	Spike reception moving in many directions
18th	Spike reception with prediction
19th	Spike reception by two or three players, understanding of reception formation
20th	Complex training with reception – set-up and spike
21st & 22nd	Games of 4-to-4 (6 x 4.5m court) using underhand service, service reception, set-up and spike

Practice: 2 days per week, 2 hours per day
Total training hours: 88 hours/6 months

3. The reasons for the introduction of such procedures for beginners

When a ball is thrown towards a beginner, he/she will run away from it. Beginners are afraid of thrown balls. The first step for the coach is to remove this fear.

Many people love to play with a ball – catching, throwing, and kicking it – on a playground or in the street. We could introduce into such play some movements and forms to familiarize them with a Volleyball ball.

Most beginners want to play Volleyball, even in the early stages, like national team players. They do not like long, fundamental training sessions. A good coach will usually expose these beginners to initial game situations which teach fundamental Volleyball playing patterns. In Volleyball, we need at least two elements:

a) To serve correctly into the opponent's court without error
b) To return the served ball into the opponent's court

Without these two elements, one cannot play and enjoy Volleyball.

In Volleyball, the ball cannot be caught and thrown, and the overhand pass is a very difficult movement which beginners have never experienced. When the players are familiar with Volleyball, "catch and throw" and "hold the ball" games should be introduced as well as the underhand pass and single hand pass (underhand service in one variation of the single hand pass). This process will make it easier to introduce Volleyball.

Many lead-up games and small-court Volleyball games with a small number of players per team (i.e. 2-to-2, 3-to-3 and 4-to-4) in competitive conditions should be played.

As shown in Table 2, the abilities of children, aged 11 to 12, are not equal to that of adult players. Special rules of the game for children, even in lead-up games, should be introduced.

Table 2

Test Items	Mini-Volleyball Players (11-12) (diff.)	Average of 20 – 21 years old normal adults
Grip strength average of both hands	25.8 kg (-15.1%)	30.4 kg
Back strength Vertical jump	74.7 kg (-12.9%) 32.0 cm (-14.9%)	85.8 kg 37.6 kg
Distance by overhand pass	7.04 m (-32.6%)	10.60 m
Distance by underhand pass	11.58 m (-29.0%)	16.30 m
Distance by underhand serve	15.00 m (-31.2%)	21.80 m

Improving the physical performance of players is one of the important goals of Volleyball training. As shown in Tables 3 and 4 (Mama-San Volleyball players), improvement of physical abilities can be expected when players have regular Volleyball training for some periods – even twice a week. Positive results in training are a big motivation.

Table 3: Comparison of Physical Characteristics and Performances of Mini Volleyball Players and Non-players

Subject/Item	MV Players Children	Non-players	Differences Mini Volleyball & non-player children
Body Height	150.1	151.0	-0.9 cm
Body Weight	42.4	42.5	-0.1 kg
Grip Strength	26.3	23.3	+3.0 kg
Back Strength	74.7	65.2	+9.5 kg
Vertical Jump	41.2	38.4	+2.8 cm
Running Jump	43.1	37.5	+5.6 cm
Block Jump	35.6	28.7	+6.9 cm
3 Successive	5.32	4.36	+0.96 m
Both Leg Broad Jump Side-Steps	41.4	36.0	+5.4 times
9 metre Shuttle Running	16.1	18.3	+2.2 secs
Forward Bending Test	12.3	14.6	-2.0 cm
Harvard Step Test	63.9	62.8	+1.1 Point

Table 4: Changes in physical performances of middle-aged women Volleyball players (around 40 years old) after 9-month training (2 days a week, 2 hours per day)

	Grip Left	Strength Right	Vertical Jump	Back Strength	Side Steps (times)	Fore Bend*	Back Bend	Harvard Step Test (Points)
1st Test	29.7 kg	32.8 kg	34.3 cm	85.5 kg	39.8 T	47.3 cm	16.0 cm	52.4 P
2nd Test	32.0 kg	34.3 kg	37.6 cm	97.7 kg	41.0 T	47.4 cm	15.9 cm	58.3 P
Difference	2.3	1.5	3.3	12.2	1.2	0.1	-0.1	5.9

* Trunk extension test

4. Fundamental Principles for Training for Beginners

The following points should be taken into consideration in training beginners:

a) Arrange systematic and reasonable training methods and processes in order to improve skills, physical performances and mental attitudes throughout daily training.
b) Use various sports activities such as other kinds of ball games to change habits and develop basic physical abilities.
c) Training should be under 10 repetitions. 10 to 15 minute breaks should be introduced after 60 minutes of training.
d) To avoid negative effects, weight training methods should not be given to children under 12 years old.
e) Warm-up and preparatory exercises should be given to all players before daily training.
f) Give enough theoretical explanations on each playing pattern for better understanding.
g) Prepare a good environment and stimulate interest in training. Encouraging and praising beginners is very important for motivation.
h) Responsibilities and roles should be given to each beginner to develop social characteristics and leader-follower relationships.
i) Do not subject beginners to heavy mental stress or pressure in the game or in training.
j) Watch health and mental conditions so as to give confidence through games and practice.
k) Give equal chances to participate in the game situations. There will be no improvement in the players who only observe or sit.
l) Do not only strive for victories; efforts during training are more important than the results of the competitions.
m) When we teach Volleyball to beginners, we should consider the following conditions in their practice sessions:
   i) Introduce the easiest way to master each fundamental playing pattern
   ii) Reduce the fear of balls
   iii) Increase interest in Volleyball by introducing many attractive training procedures
   iv) Prevent pain and injury by introducing suitable training procedures based on the players' abilities and physical conditions
   v) Avoid directly introducing some playing patterns without drills to first familiarize them with the balls
   vi) Introduce many initial game situations as soon as possible after players have mastered passing and serving techniques.

5. Samples of Teaching Methods for Beginners

A. Play with a ball by one player

a) One hand dribbling (left hand or right hand) - (Fig. 5-1a)
b) Both hands dribbling moving forward or rolling a ball - (Fig. 5-1b)
c) Both hands dribbling moving backward or rolling a ball - (Fig. 5-1c)
d) Side step dribbling (left or right) or rolling a ball - (Fig. 5-1d)
e) Cross-step dribbling (left or right) - (Fig. 5-1e)
f) Jumping catch moving forward - (Fig. 5-1f)
g) One bounce crouching catch - (Fig. 5-1g)
h) Rotate a ball between each leg or body - (Fig. 5-1h)
i) One hand dribbling in crouching position stretching one leg after the other - (Fig. 5-1i)
j) Move and turn with ball between ankles or knees - (Fig. 5-1j)
k) V-sit in supine position - (Fig. 5-1k)
l) Back bend in prone position with ball - (Fig. 5-1l)
m) Ball thrown behind hip or back - (Fig. 5-1m)
n) Side-rolling keeping a ball by hands - (Fig. 5-1n)
o) Jack knife jump keeping a ball by both ankles - (Fig. 5-1o)
p) Ball thrown forward, push-up position and moving forward crouching catch - (Fig. 5-1p)
q) Jumping push in succession
r) One bounce crouching catch moving forward
s) One bounce rolling catch

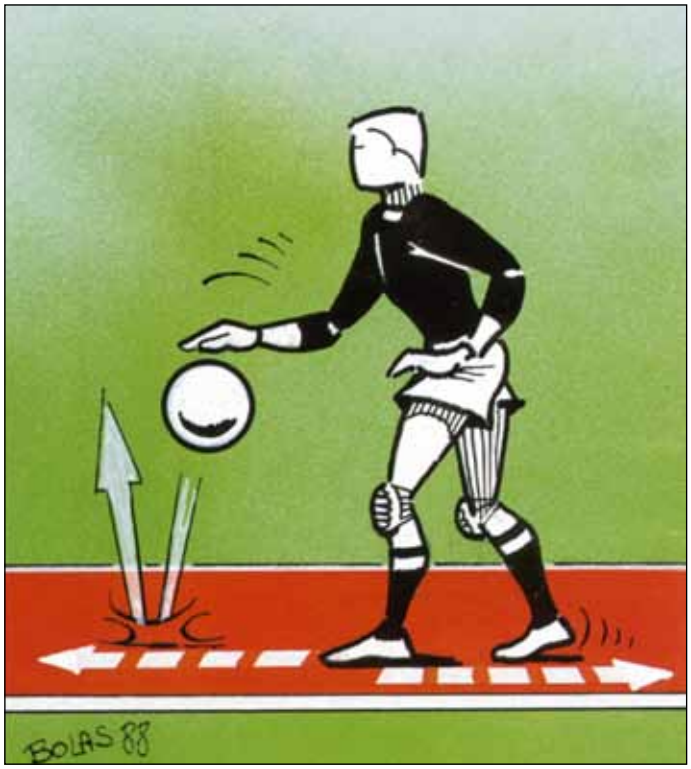


Fig. 5-1a

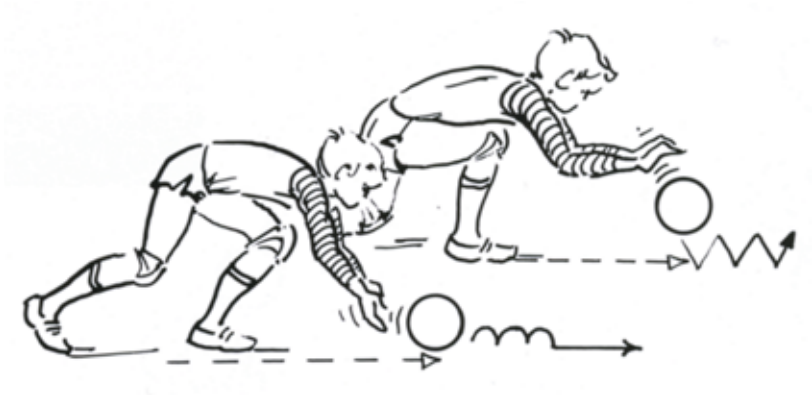


Fig. 5-1b

Fig. 5-1c

Fig. 5-1d

Fig. 5-1e

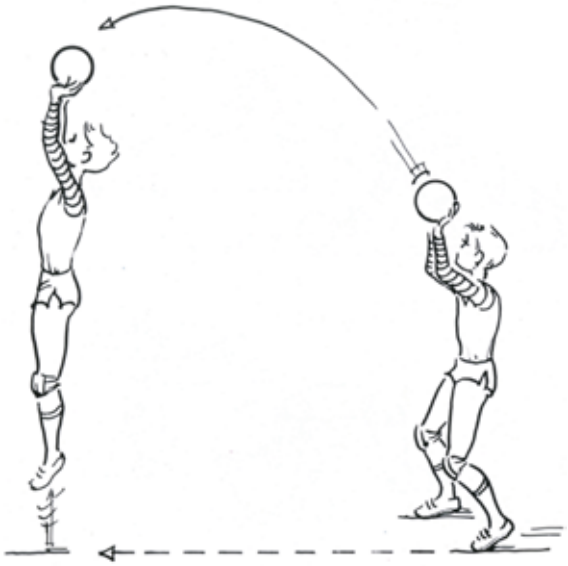


Fig. 5-1f

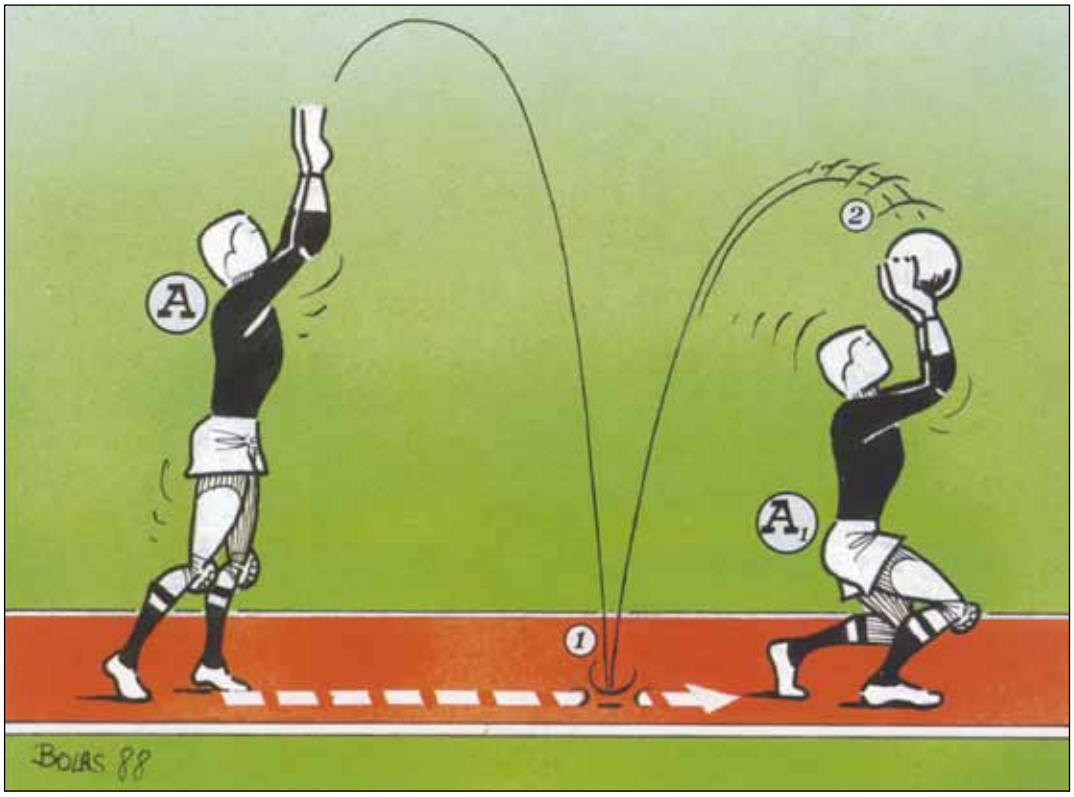


Fig. 5-1g

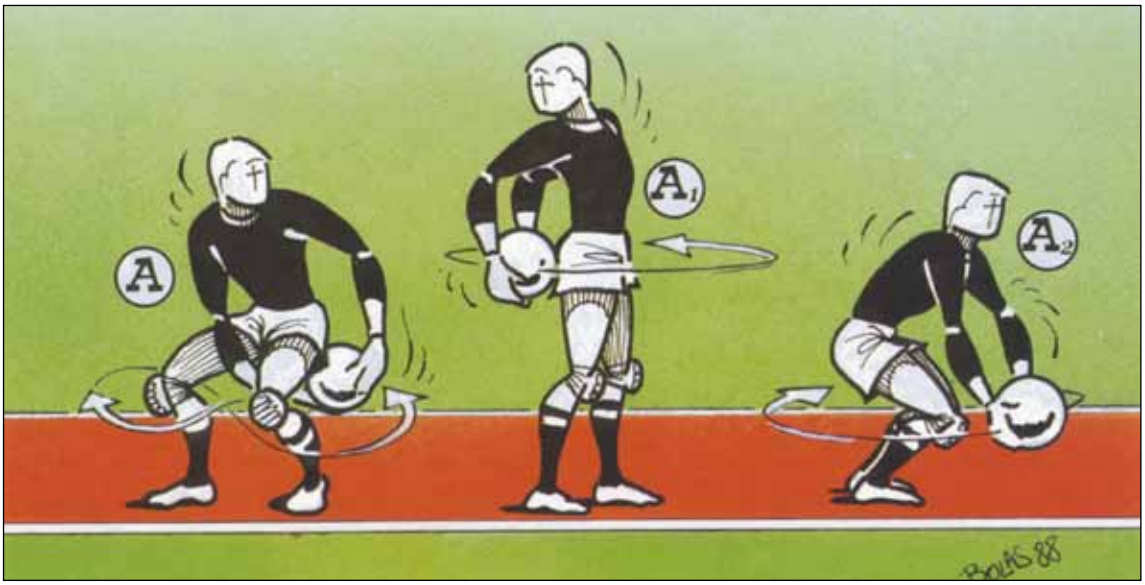


Fig. 5-1h

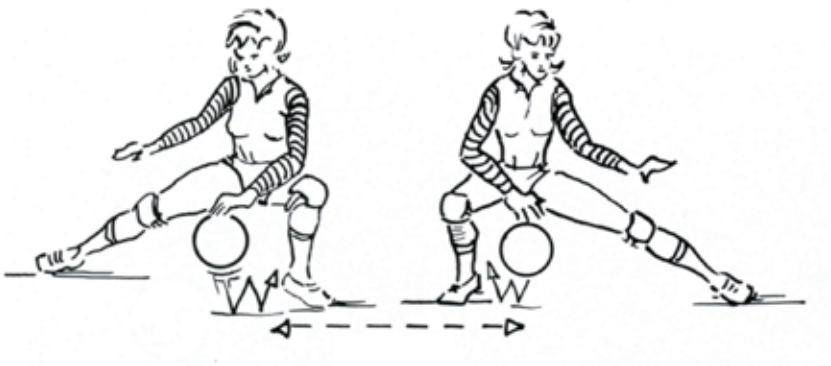


Fig. 5-1i

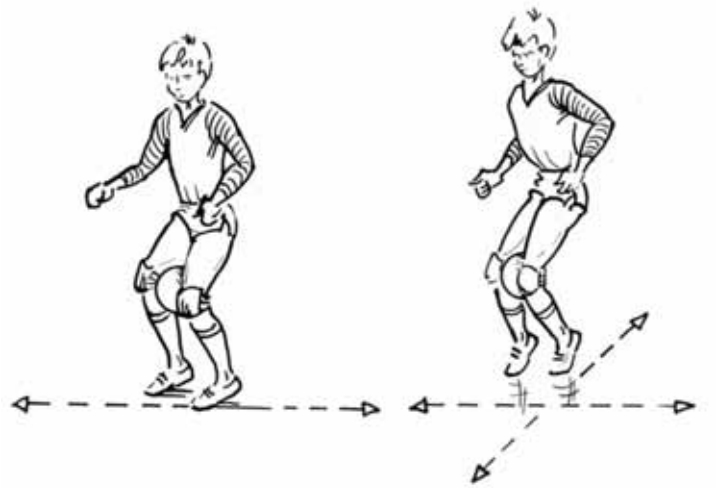


Fig. 5-1j

Fig. 5-1k

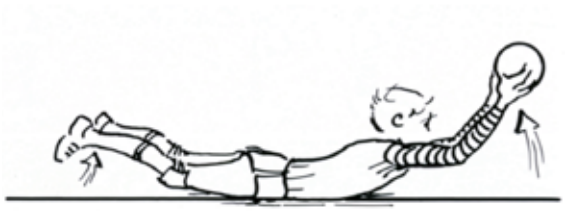


Fig. 5-1l

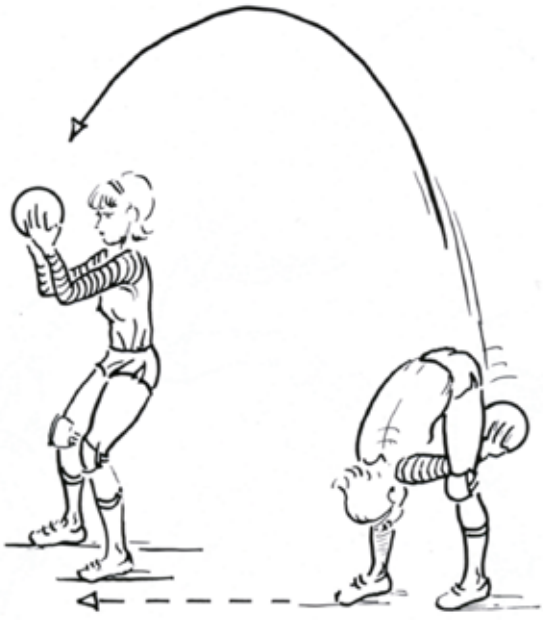


Fig. 5-1m

Fig. 5-1n

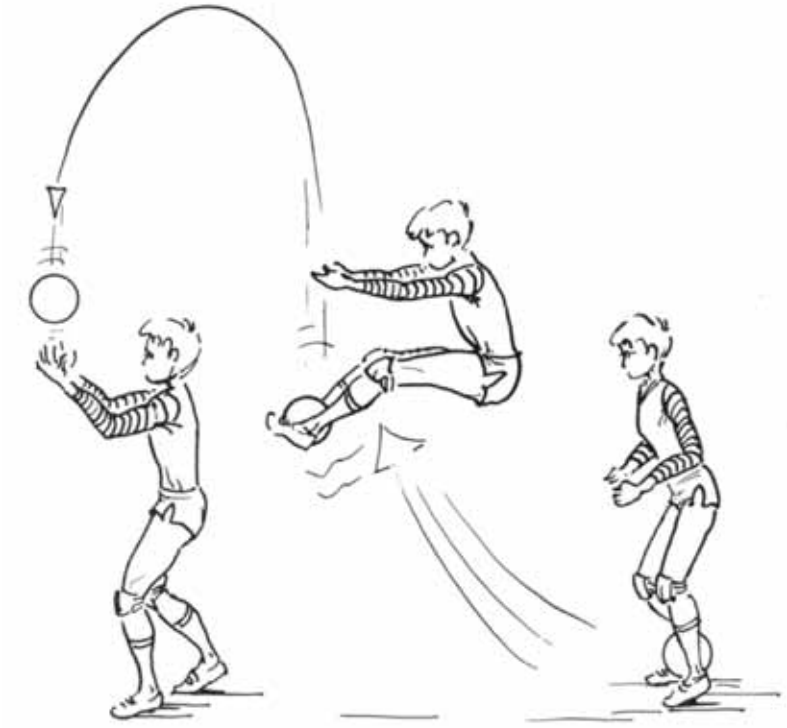


Fig. 5-1o

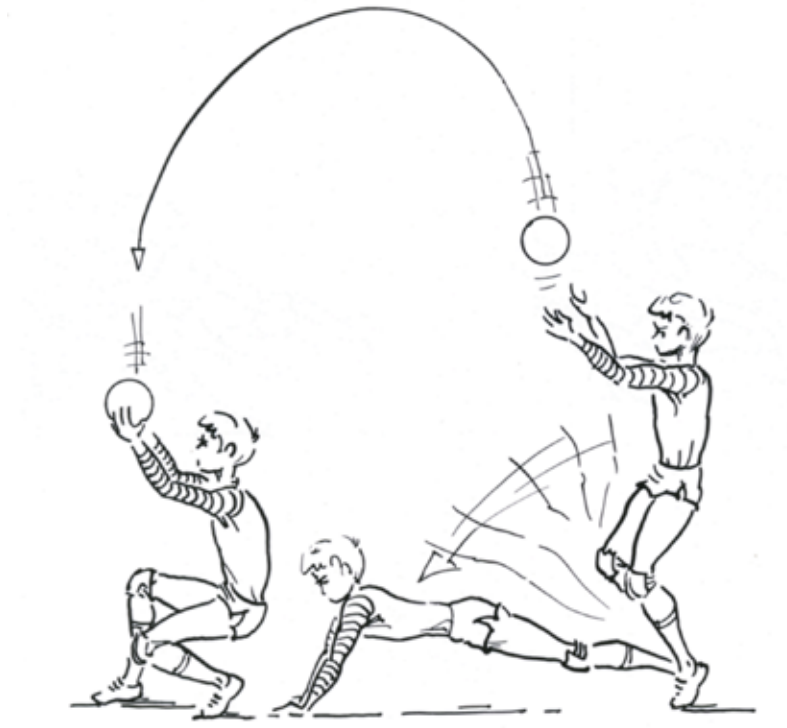


Fig. 5-1p

B. Play with a ball by two players

a) Catch, sit up and throw between two players (3 metres)
b) Catch ball in supine position by two players
c) Chest pass in sitting position
d) Chest pass and turning - (Fig. 5-2d)
e) Chest pass and push-up position - (Fig. 5-2e)
f) Chest pass and prone position - (Fig. 5-2f)
g) Catch and turning throw - (Fig. 5-2g)
h) Jump catch and throw in the air - (Fig. 5-2h)
i) Back and side bending towards each other - (Fig. 5-2i1, 5-2i2)
j) Twisting bodies pass to each other - (Fig. 5-2j)
k) Twisting bodies and throw a ball to partner - (Fig. 5-2k)
l) Deliver a ball between legs and above head - (Fig. 5-2l)
m) Horse jump and catch a ball after one bounce - (Fig. 5-2m)
n) Horse jump and catch with no bounce - (Fig. 5-2n)
o) Jump and throw a ball in jack knife position - (Fig. 5-2o)

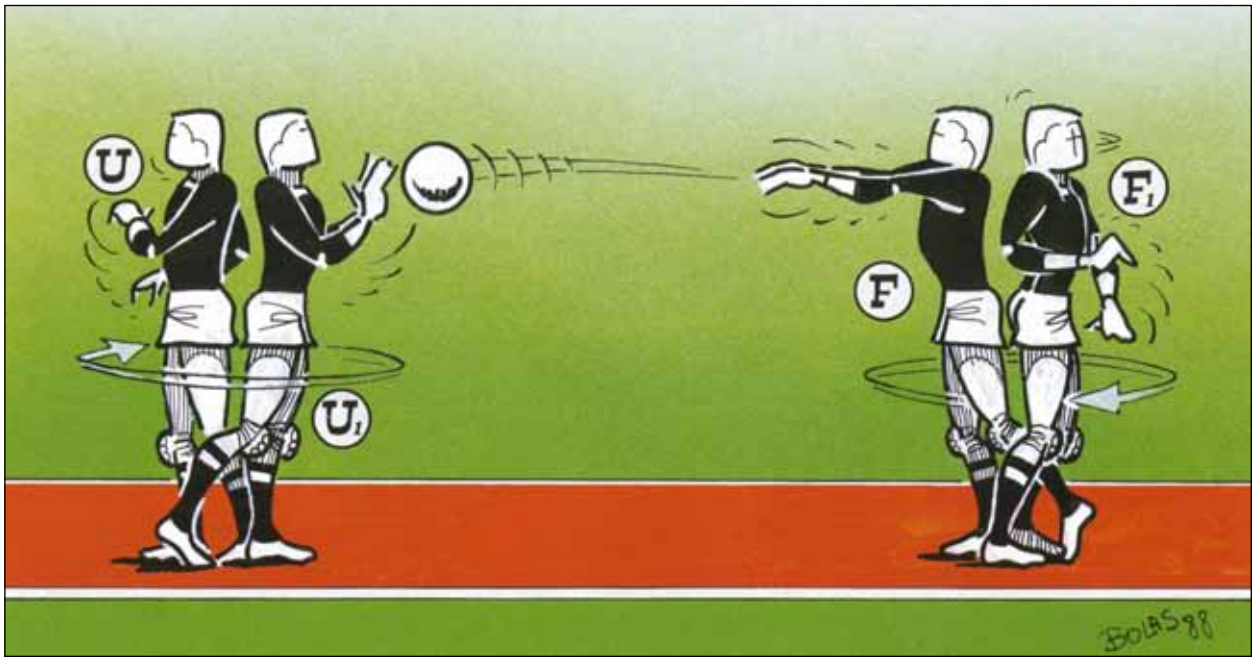


Fig. 5-2d

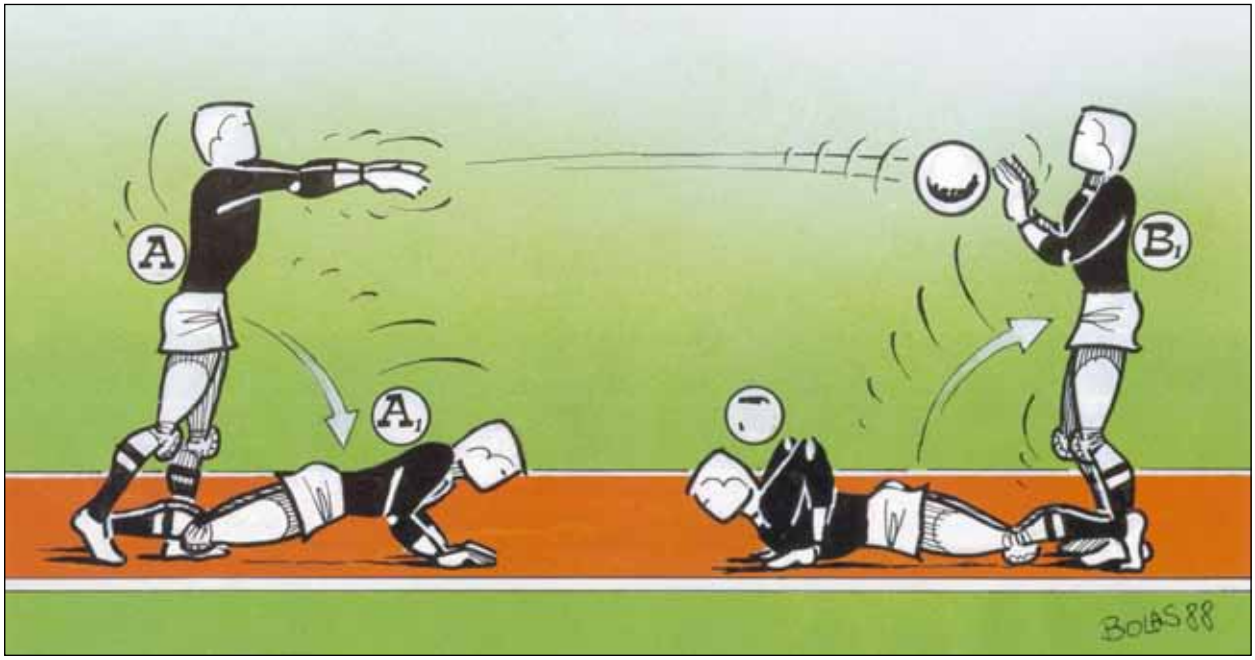


Fig. 5-2e

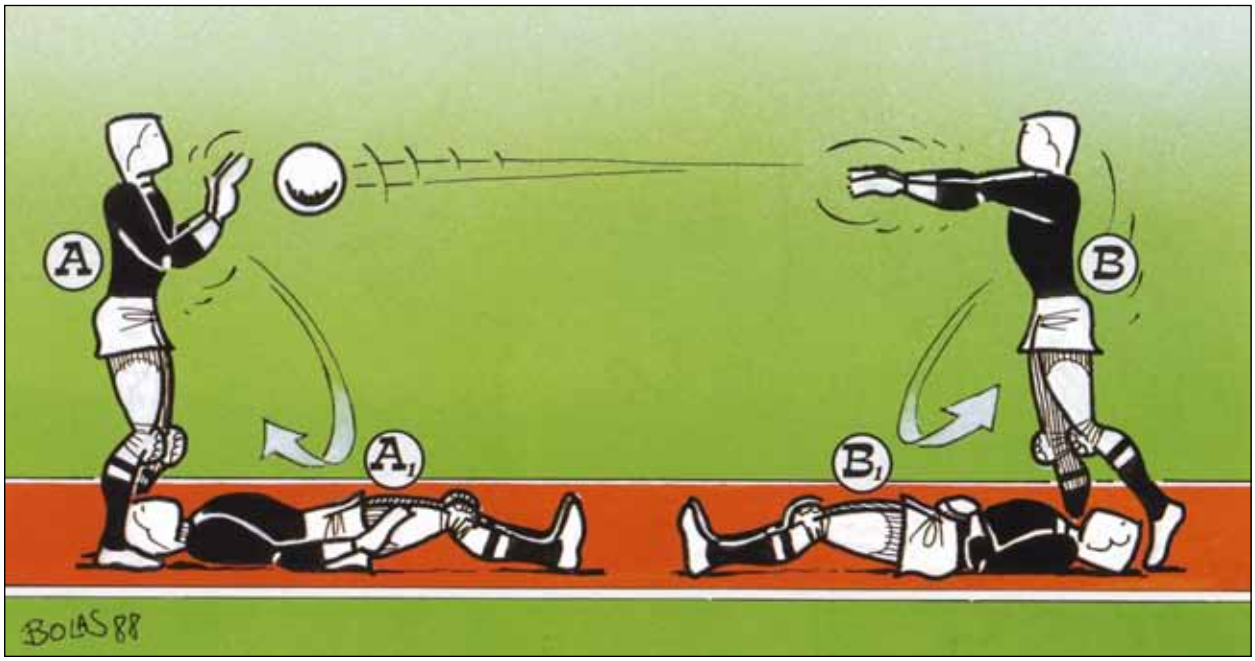


Fig. 5-2f

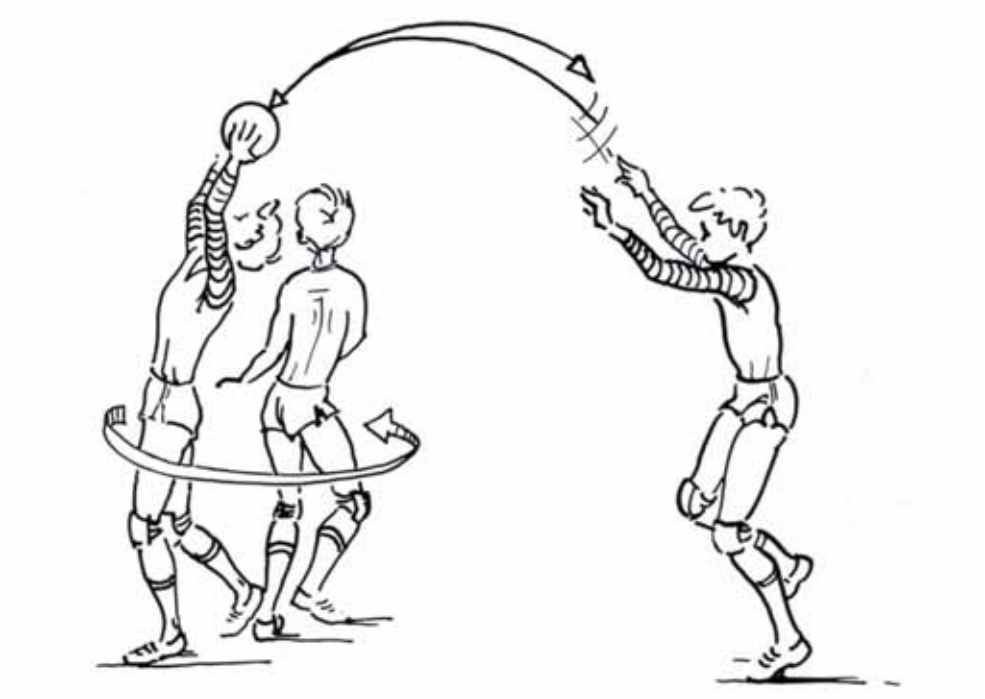


Fig. 5-2g

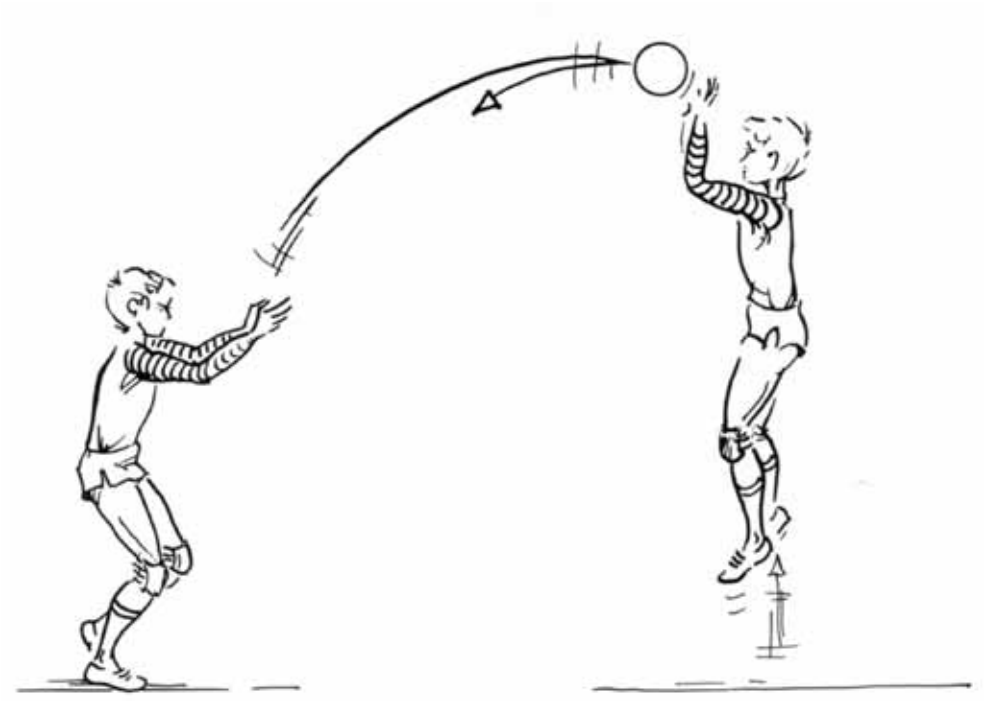


Fig. 5-2h

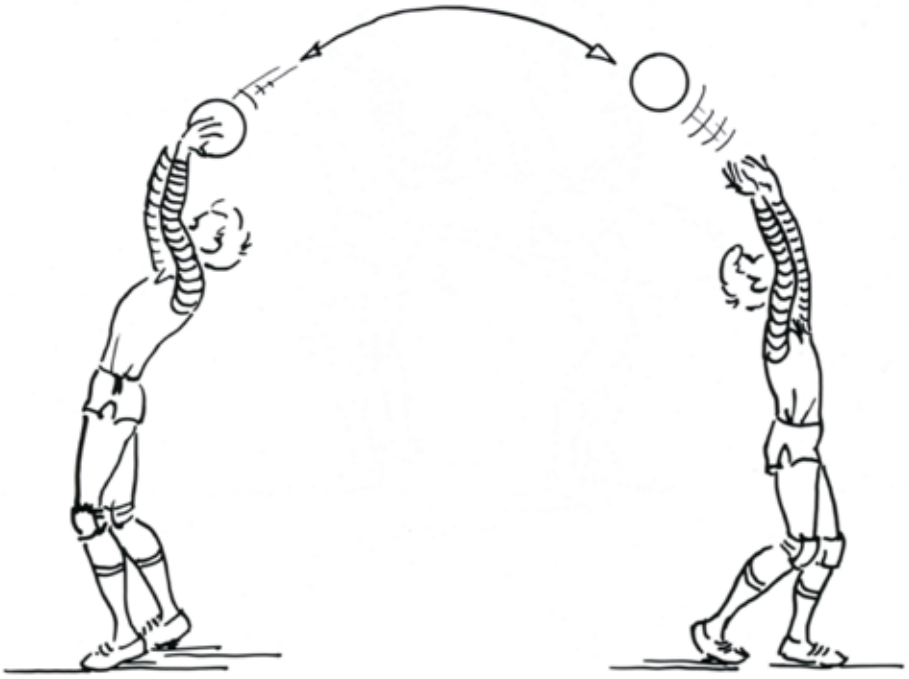


Fig. 5-2i1

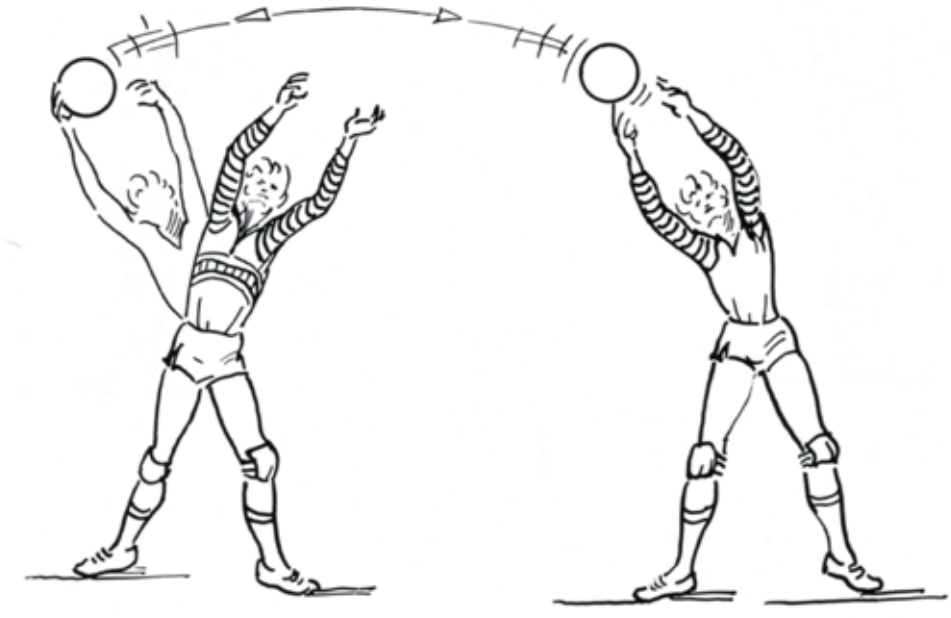


Fig. 5-2i2

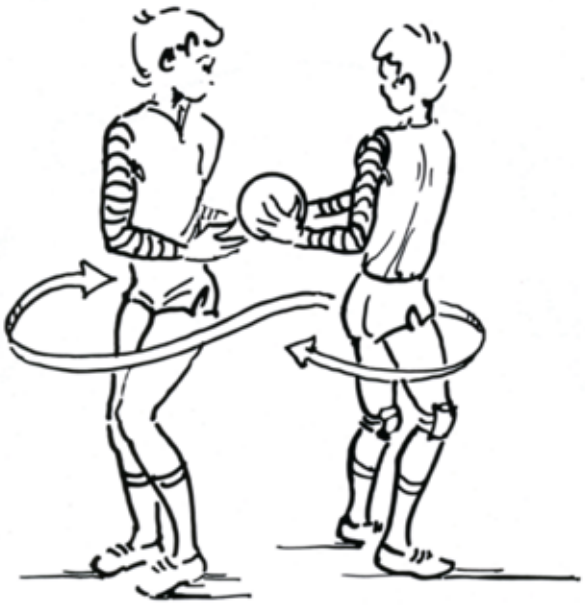


Fig. 5-2j

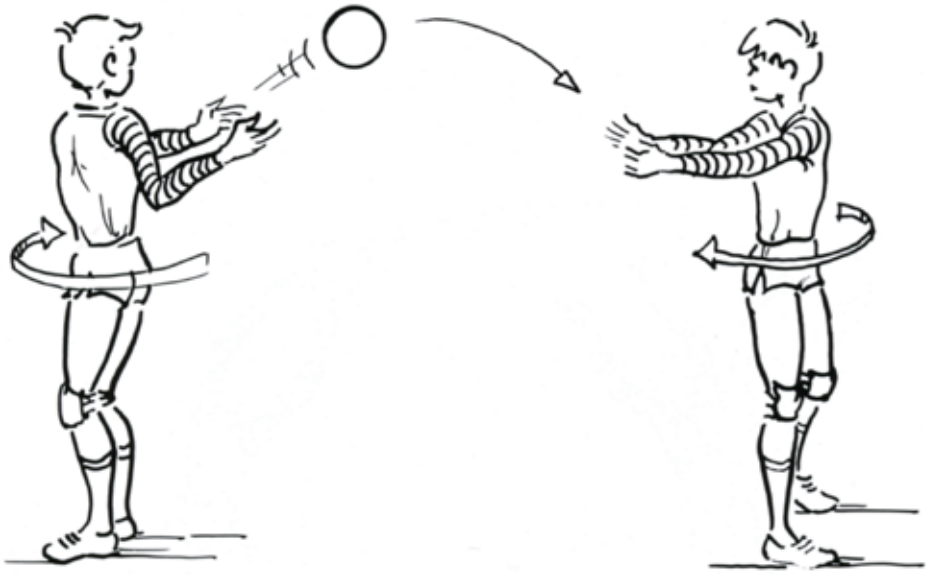


Fig. 5-2k

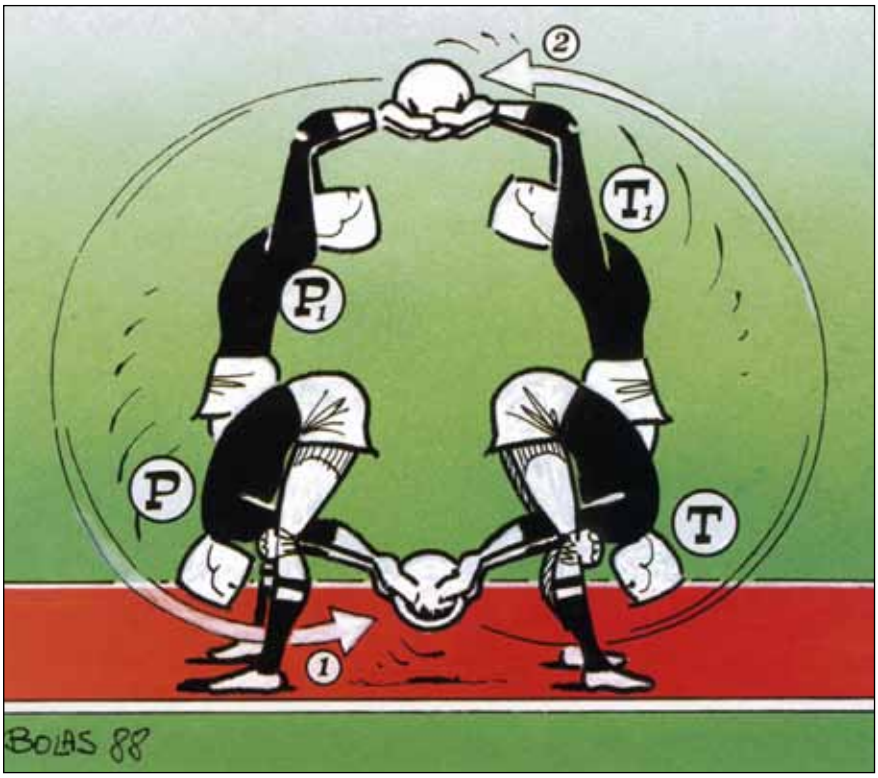


Fig. 5-2l

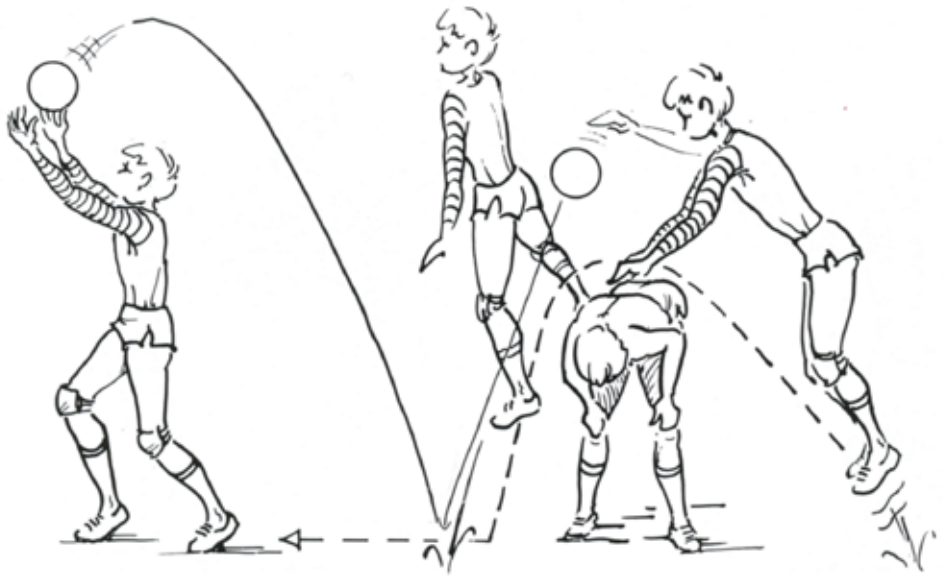


Fig. 5-2m

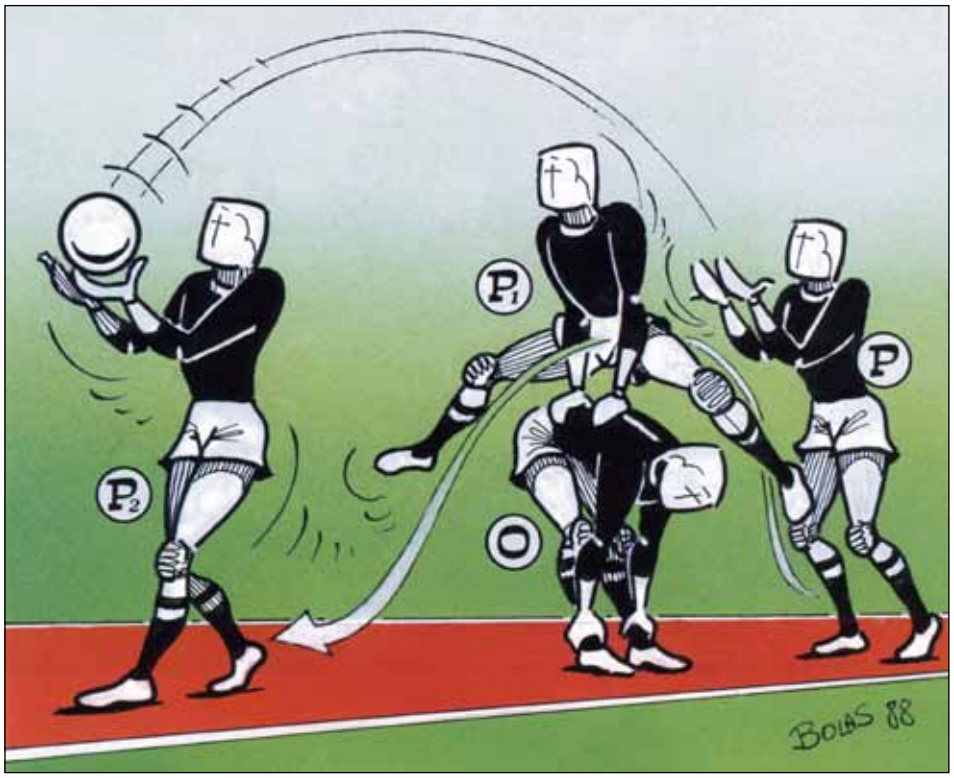


Fig. 5-2n

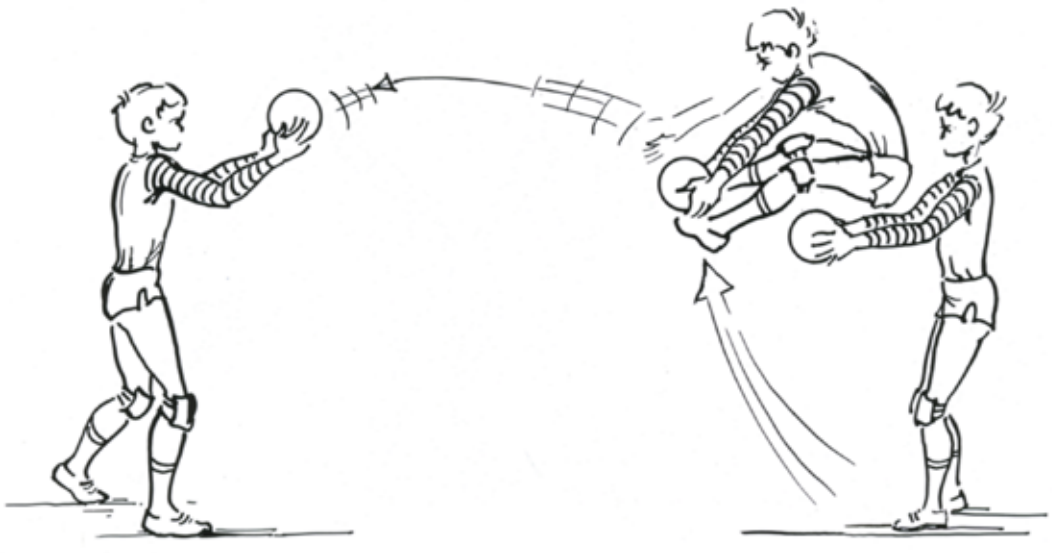


Fig. 5-2o

C. Introduction to underhand pass

a) Combination of both arms and fundamental posture - (Fig. 5-3a)
b) One bounce and ball on the arms - (Fig. 5-3b)
c) One bounce volley in succession - (Fig. 5-3c1, Fig. 5-3c2)
d) No bounce successive volley - (Fig. 5-3d)
e) Man-to-man one bounce volley like tennis - (Fig. 5-3e)
f) Wall volley after one bounce - (Fig. 5-3f)
g) No bounce successive volley moving left and right - (Fig. 5-3g)
h) No bounce successive volley changing direction
i) Man-to-man successive underhand pass
j) No bounce successive volley moving forward - (Fig. 5-3j)
k) No bounce successive volley moving left or right - (Fig. 5-3k)

Fig. 5-3a

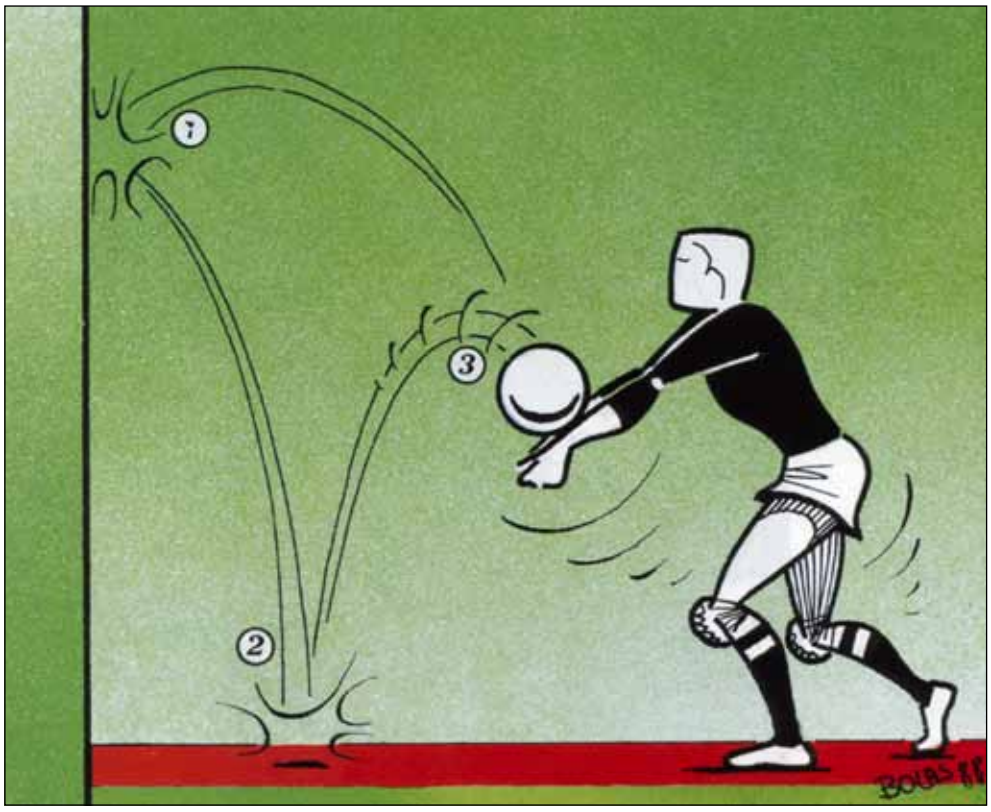


Fig. 5-3b

Fig. 5-3c1

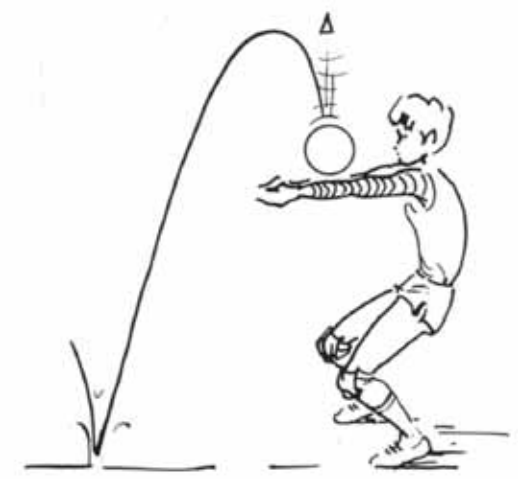


Fig. 5-3c2

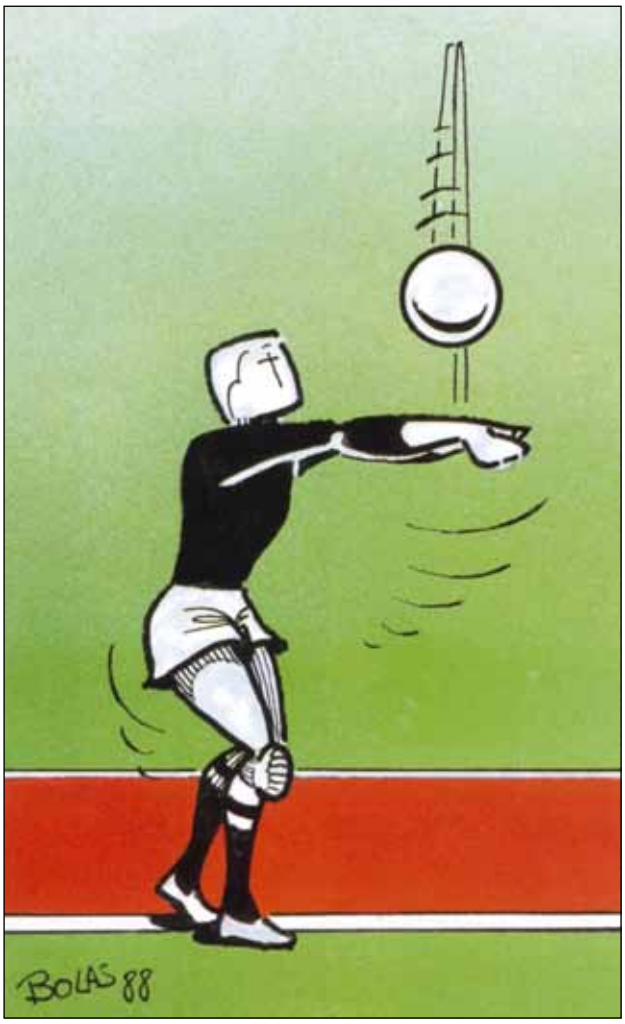


Fig. 5-3d

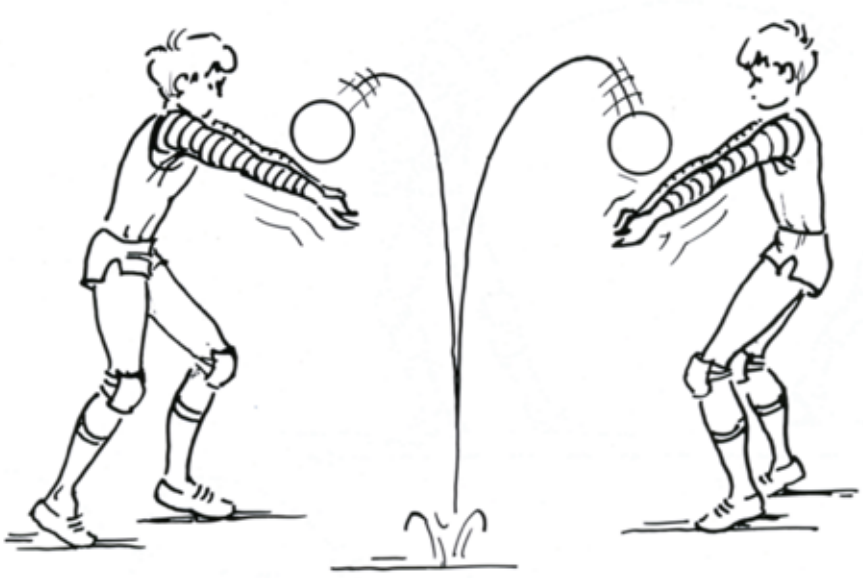


Fig. 5-3e

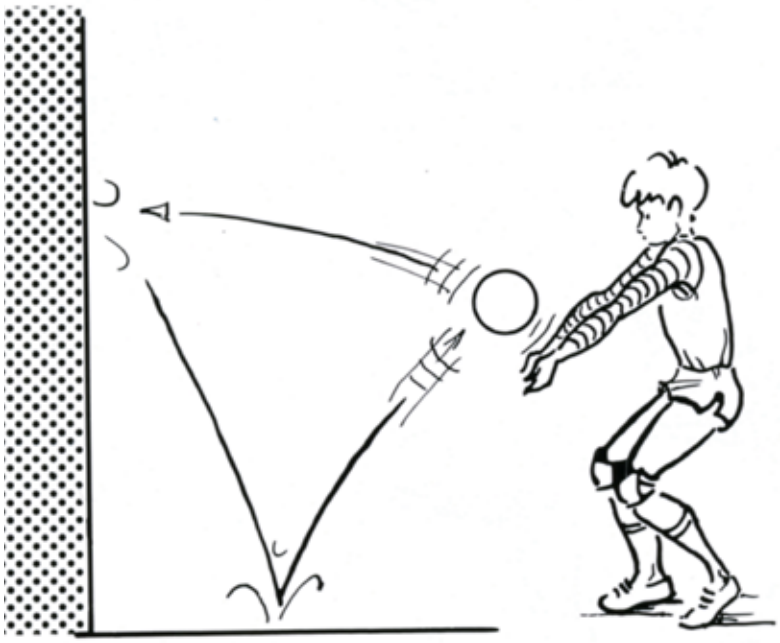


Fig. 5-3f

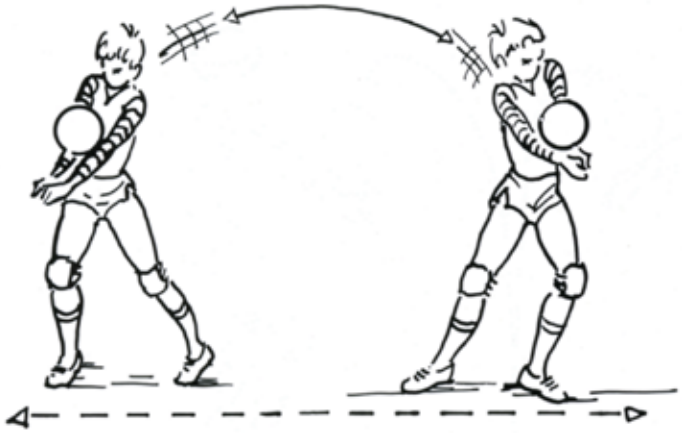


Fig. 5-3g

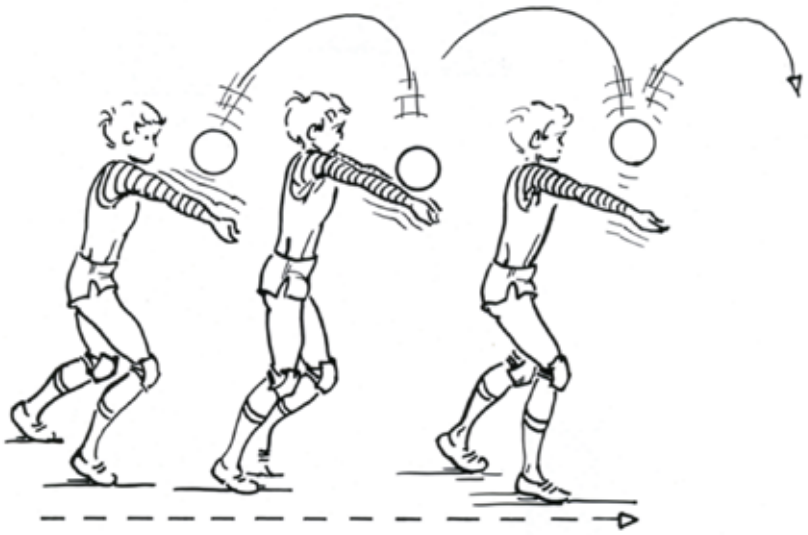


Fig. 5-3j

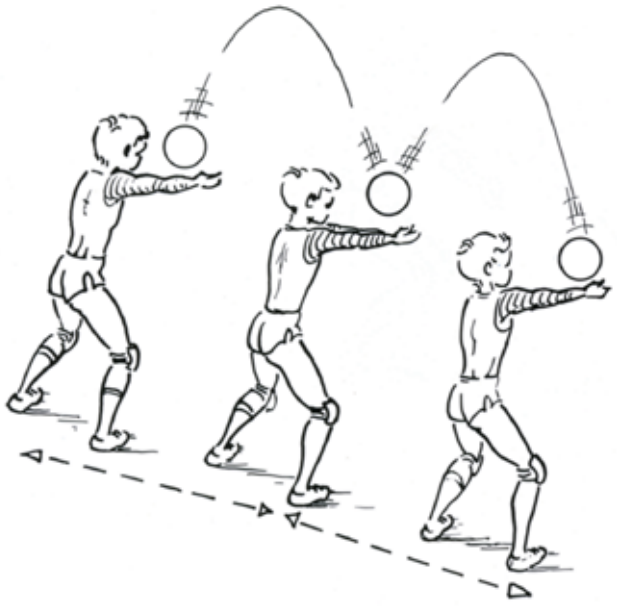


Fig. 5-3k

D. Introduction to underhand service (single hand pass)

a) Once bounce single arm volley (left or right) - (Fig. 5-4a)
b) One bounce single arm volley in turn - (Fig. 5-4b)
c) One bounce wall volley - (Fig. 5-4c)
d) One bounce man-to-man volley (like tennis) - (Fig. 5-4d)
e) No bounce single arm volley (left or right) - (Fig. 5-4e)
f) No bounce left, right and both arm volley
g) No bounce left and right arm volley moving sideways - (Fig. 5-4g)
h) No bounce wall volley in succession - (Fig. 5-4h)
i) Man-to-man single arm pass - (Fig. 5-4i)
j) Serve a ball to the wall by underhand form - (Fig. 5-4j)
k) Serve a ball to the opponent's court passing over the net (3 metres, 5 metres and 7 metres) then behind the end-line - (Fig. 5-4k)
l) Service control games (10 services in each) - (Fig. 5-4l)

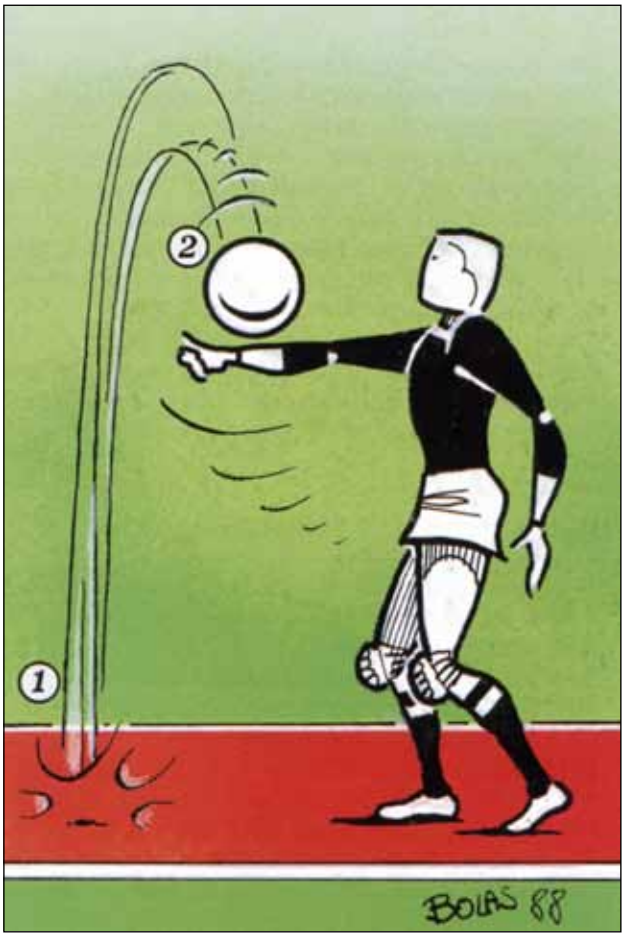


Fig. 5-4a

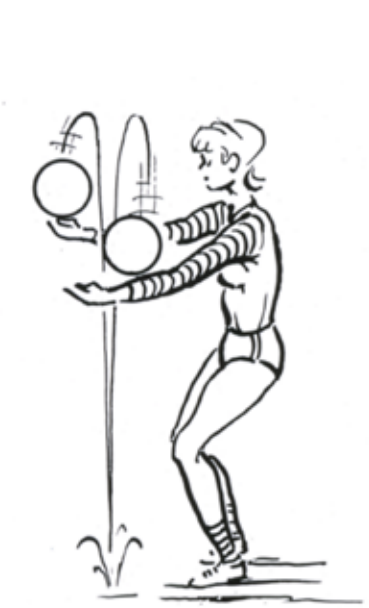


Fig. 5-4b

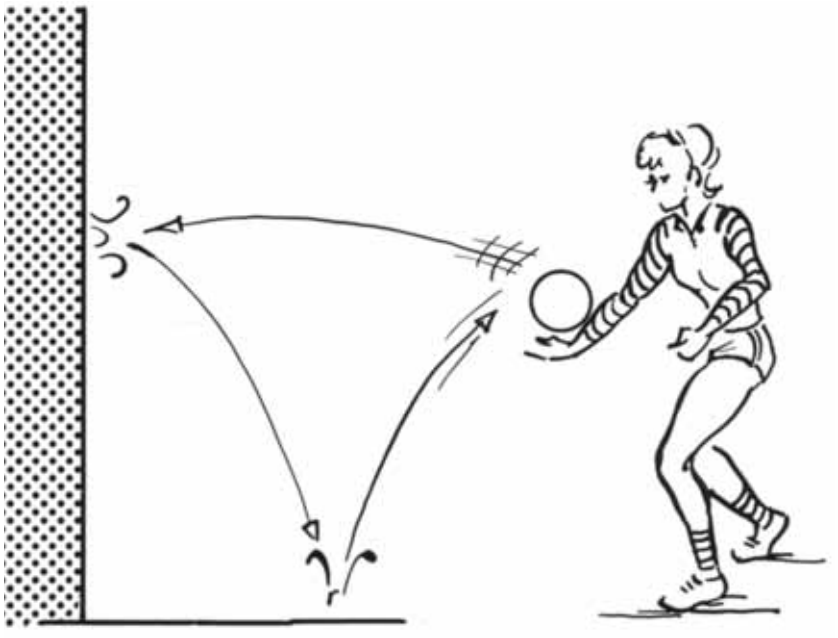


Fig. 5-4c

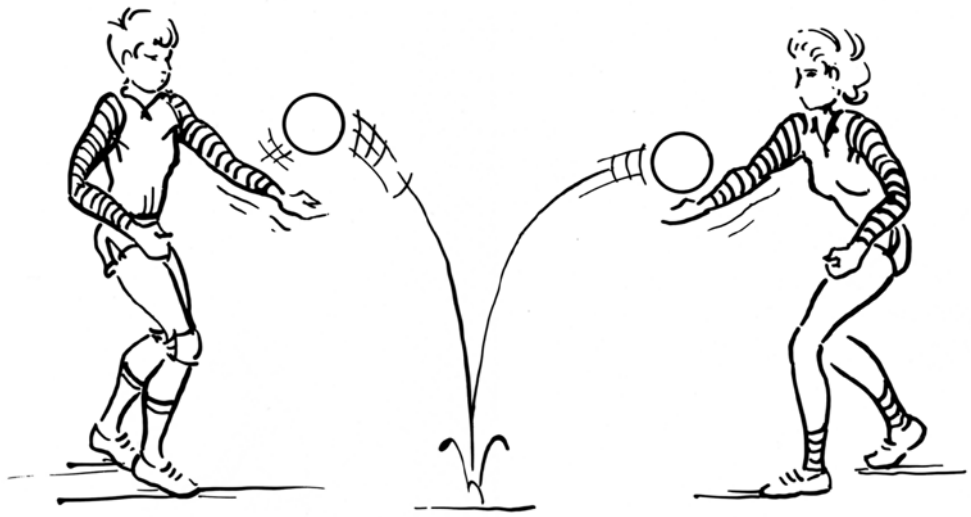


Fig. 5-4d

Fig. 5-4e

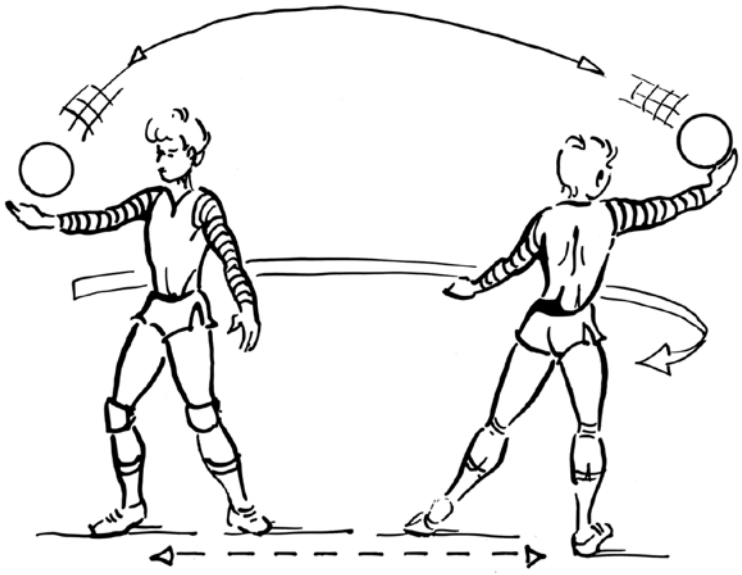


Fig. 5-4g

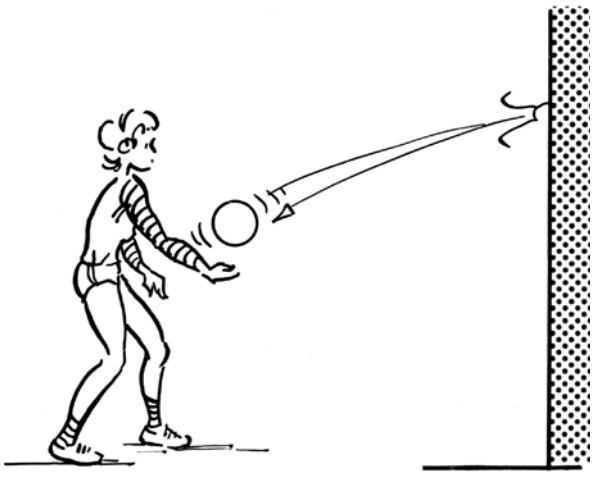


Fig. 5-4h

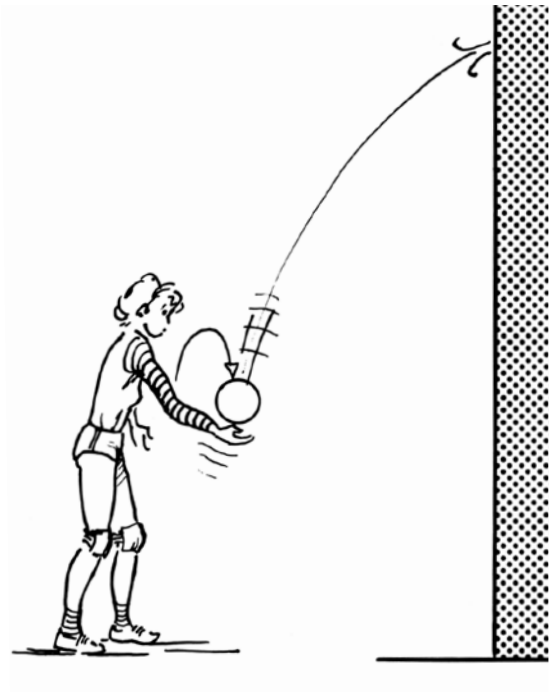


Fig. 5-4j

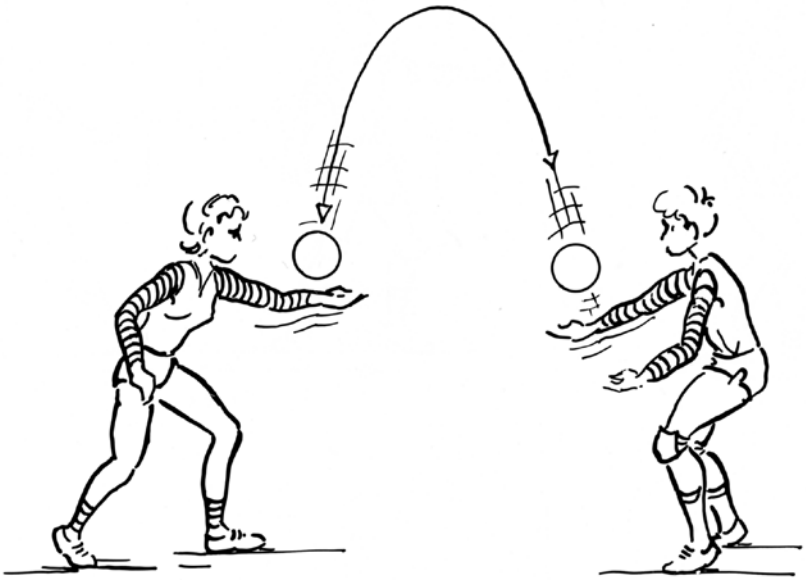


Fig. 5-4i

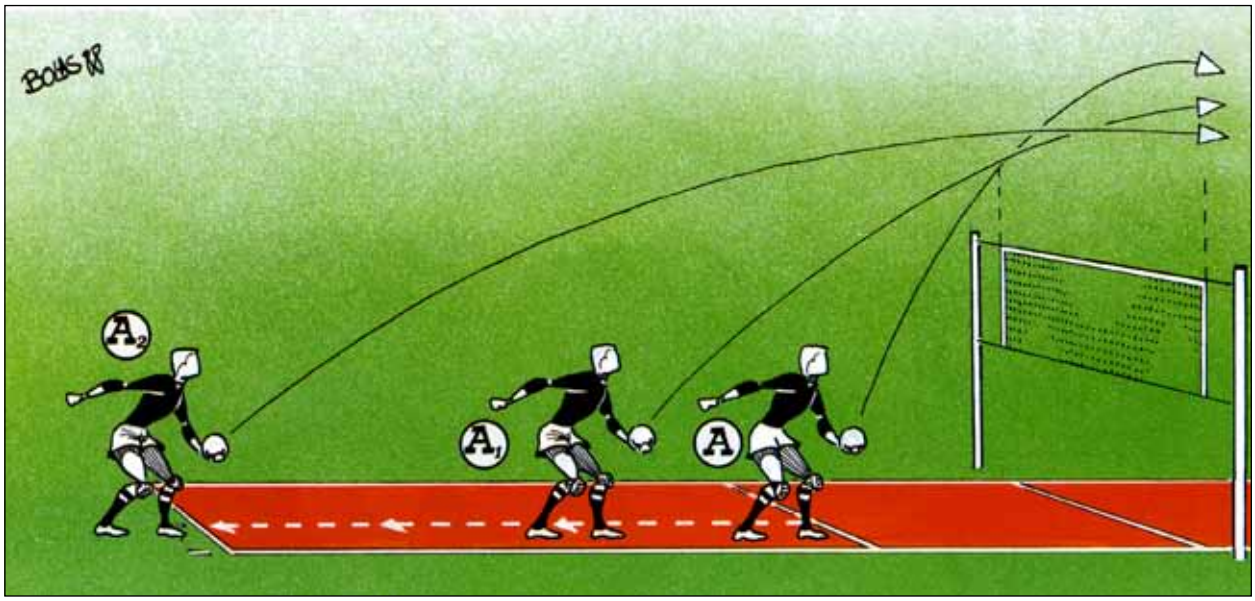


Fig. 5-4k

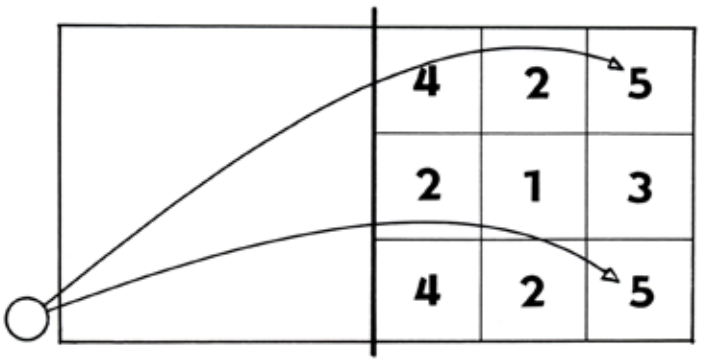


Fig. 5-4l

E. Introduction to overhand pass (set-up)

a) Hands position and ball contact - (Fig. 5-5a)
b) Ball dribbling to floor - (Fig. 5-5b)
c) Ball lift from floor - (Fig. 5-5c)
d) Ball catch and throw by single hand - (Fig. 5-5d)
e) One bounce catch in overhand position - (Fig. 5-5e1, Fig. 5-5e2)
f) No bounce catch and throw quickly - (Fig. 5-5f)
g) No bounce catch moving forward - (Fig. 5-5g)
h) No bounce catch moving sideward
i) No bounce catch turning left or right - (Fig. 5-5i)
j) No bounce catch in crouching posture - (Fig. 5-5j)
k) Successive push ups and set-ups - (Fig. 5-5k)
l) Throw forward and back set moving forward - (Fig. 5-5l)
m) Successive set-ups moving sideward
n) Successive set-ups turning left or right (90 degrees, 180 degrees and 360 degrees) - (Fig. 5-5n1, Fig. 5-5n2)
o) Successive set-ups moving forward - (Fig. 5-5o)
p) Throw forward and jumping set-up - (Fig. 5-5p)
q) Wall one bounce pass - (Fig. 5-5q)
r) Wall no bounce pass - (Fig. 5-5r)
s) Man-to-man one bounce pass in crouching position - (Fig. 5-5s)
t) Man-to-man sitting pass - (Fig. 5-5t)
u) Man-to-man floor touch pass - (Fig. 5-5u)
v) Man-to-man one set and back pass - (Fig. 5-5v)
w) Man-to-man one set and pass - (Fig. 5-5w)
x) Man-to-man sideward pass - (Fig. 5-5x)

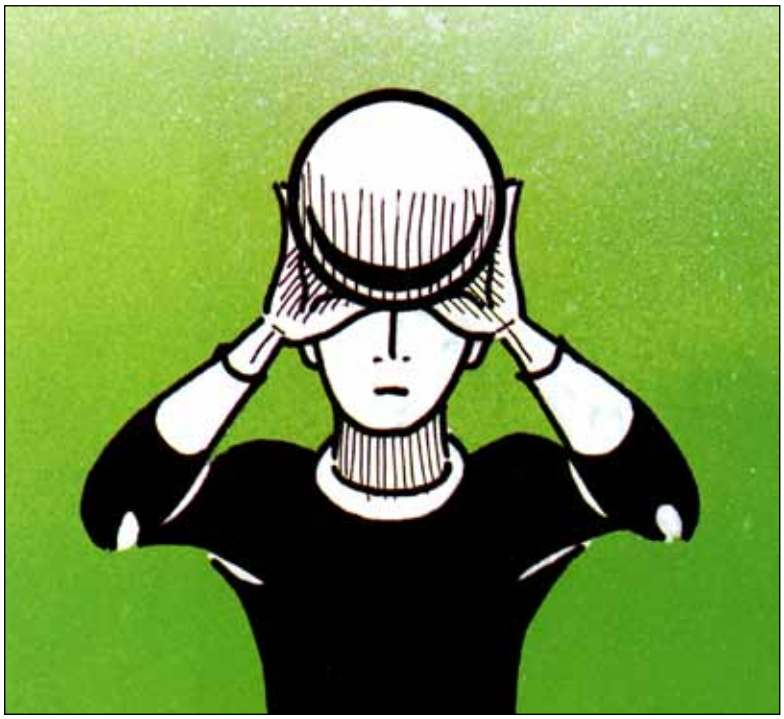


Fig. 5-5a

Fig. 5-5b

Fig. 5-5c

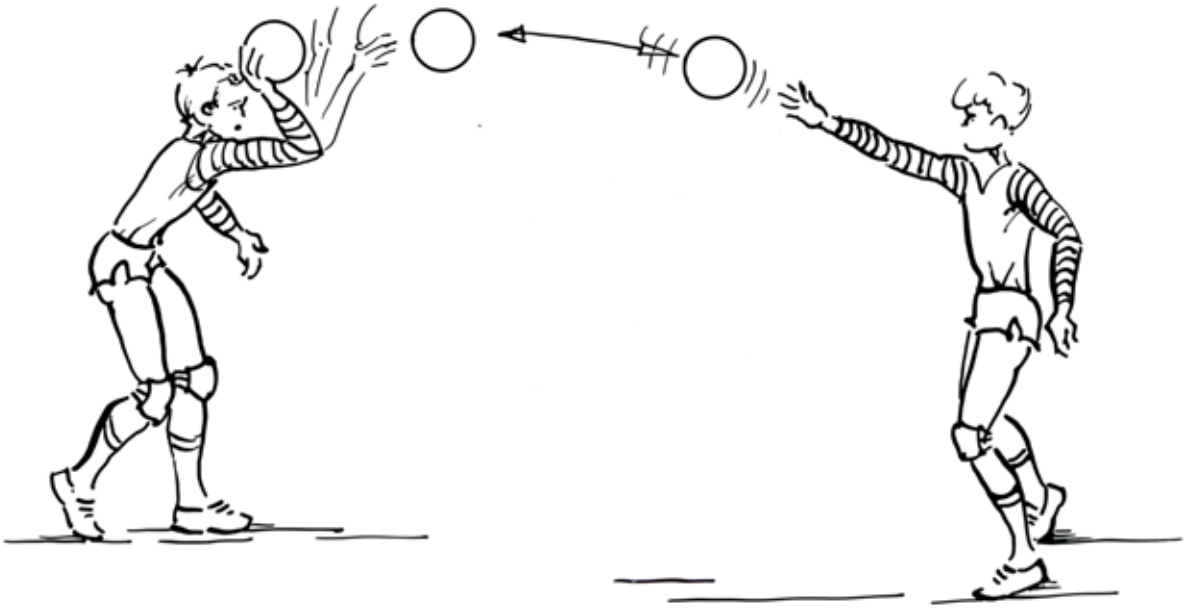


Fig. 5-5d

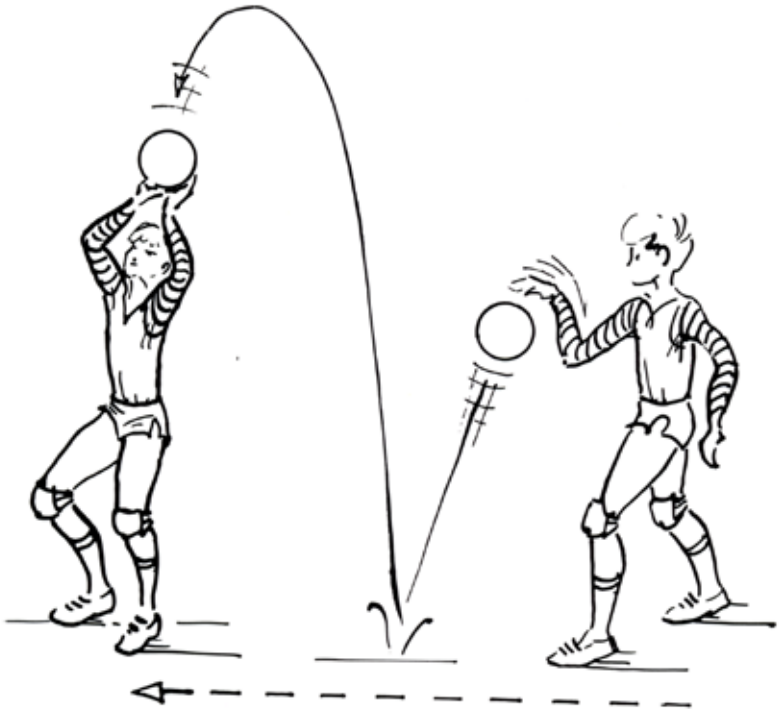


Fig. 5-5e1

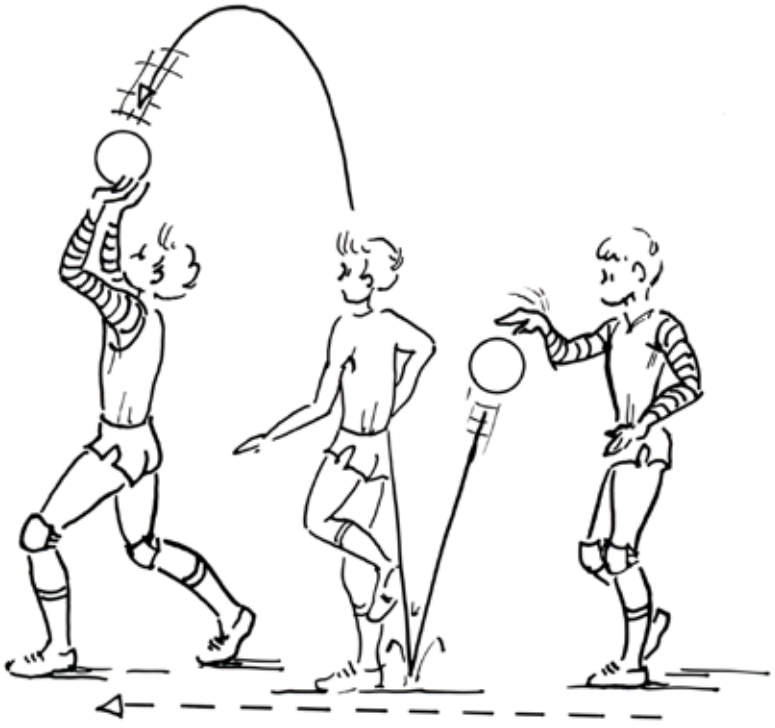


Fig. 5-5e2

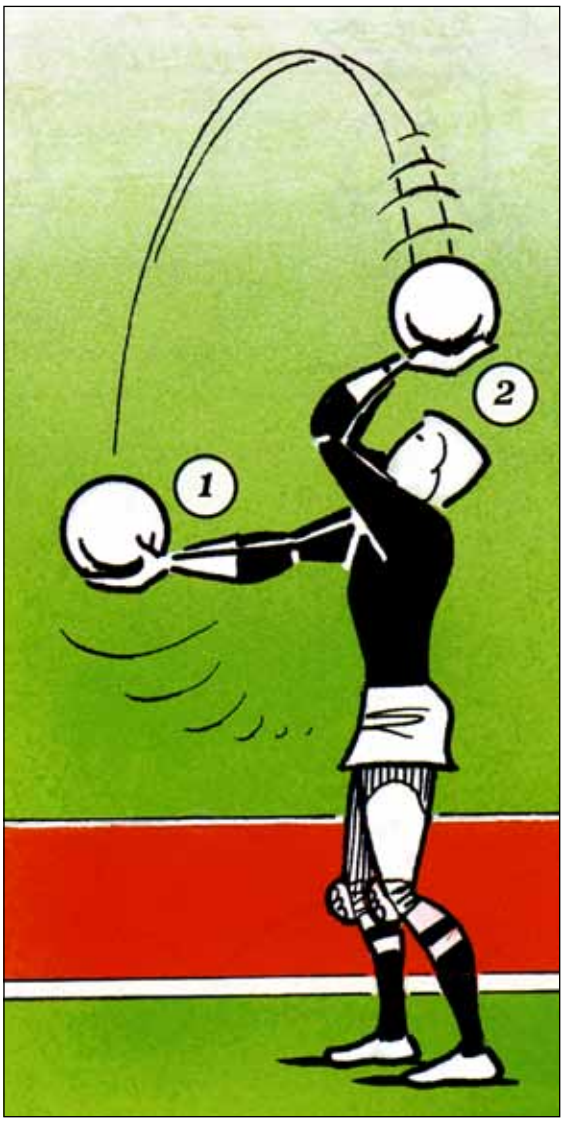


Fig. 5-5f

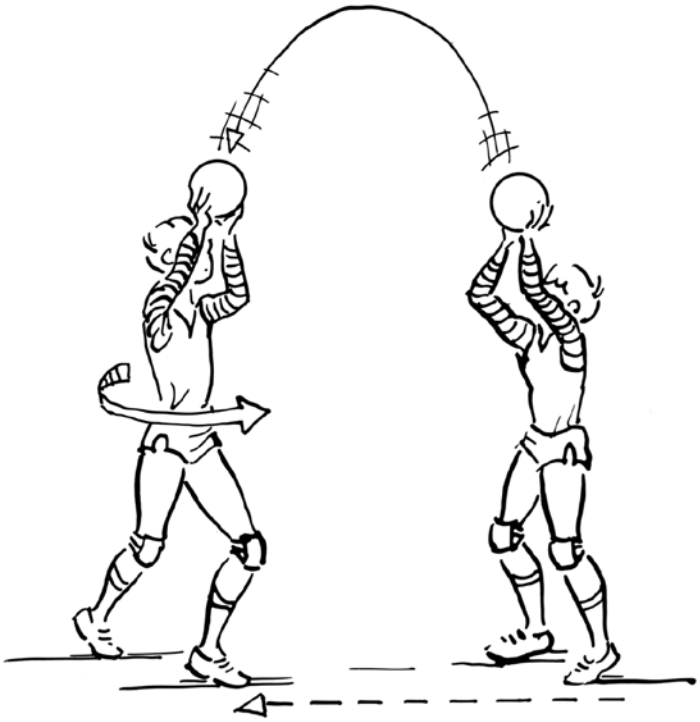


Fig. 5-5g

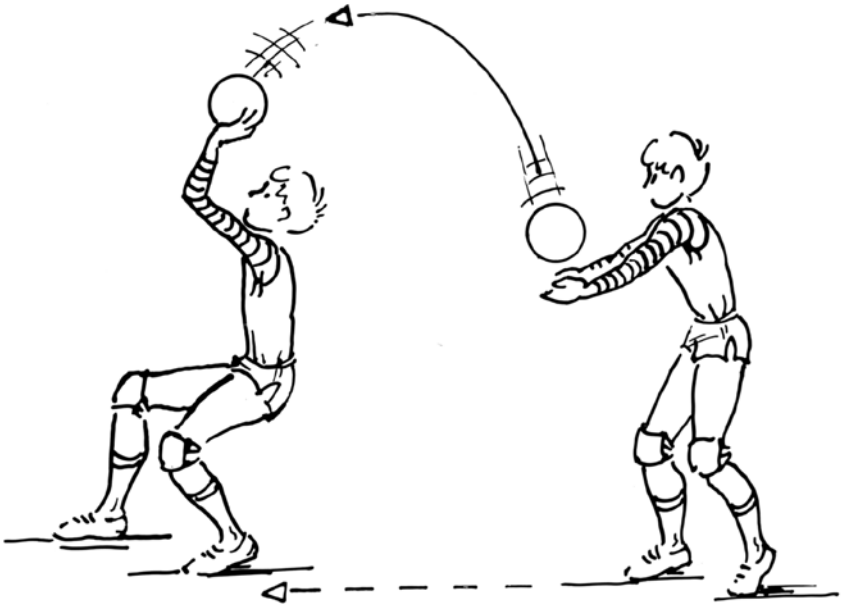


Fig. 5-5i

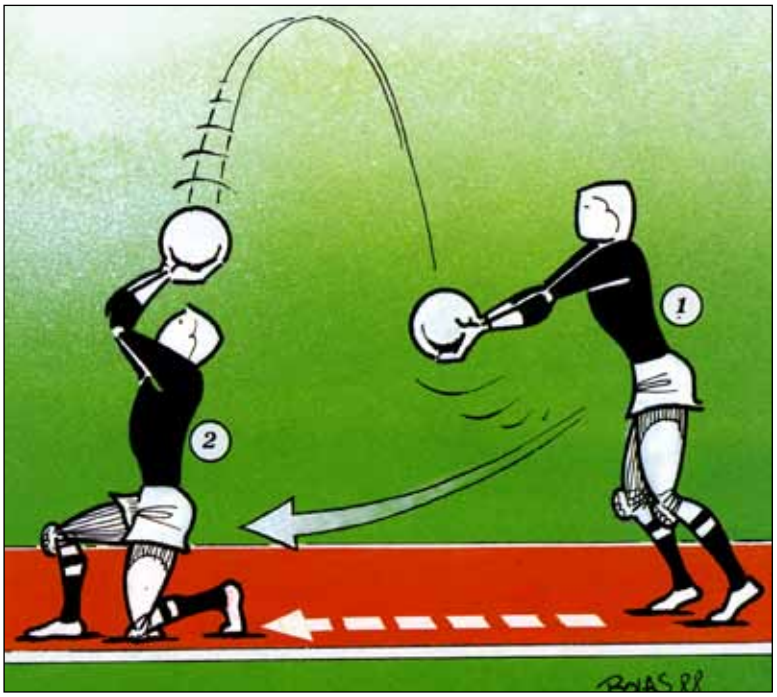


Fig. 5-5j

Fig. 5-5k

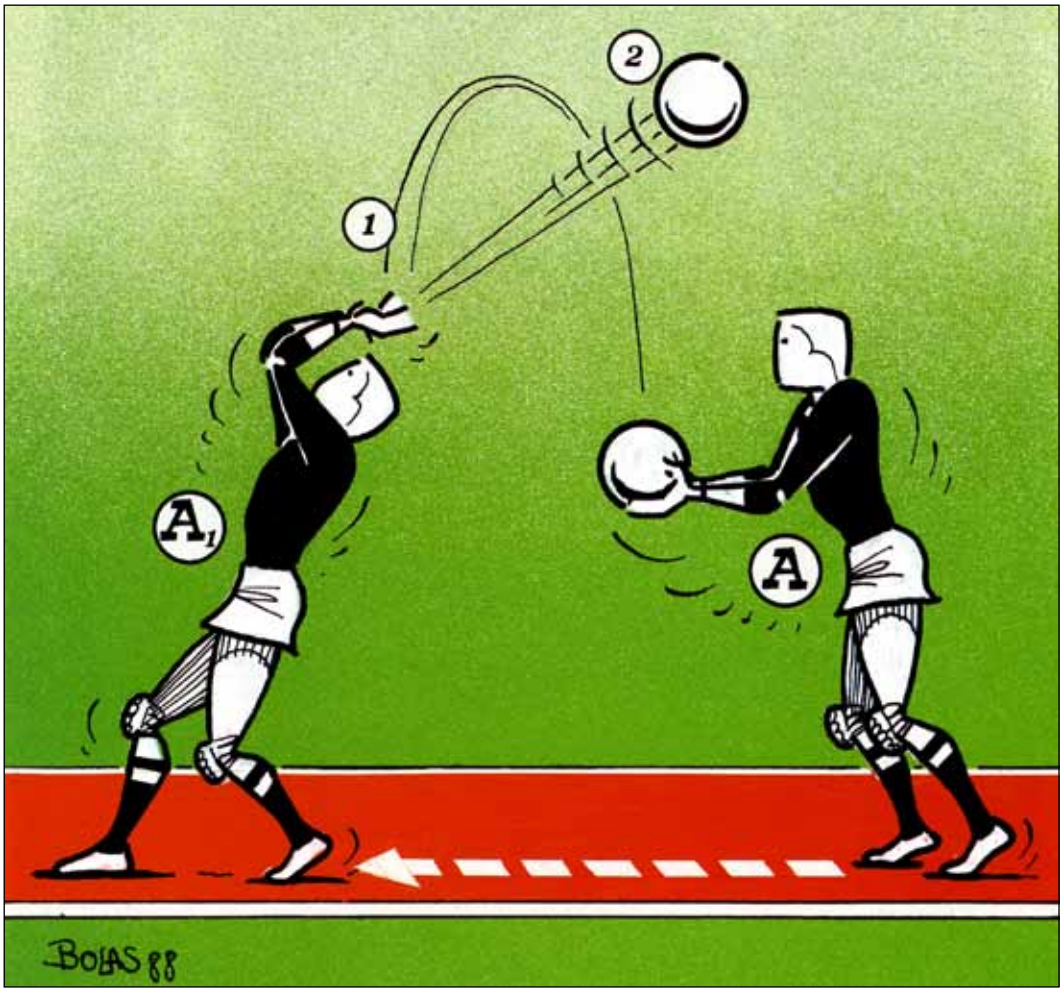


Fig. 5-5l

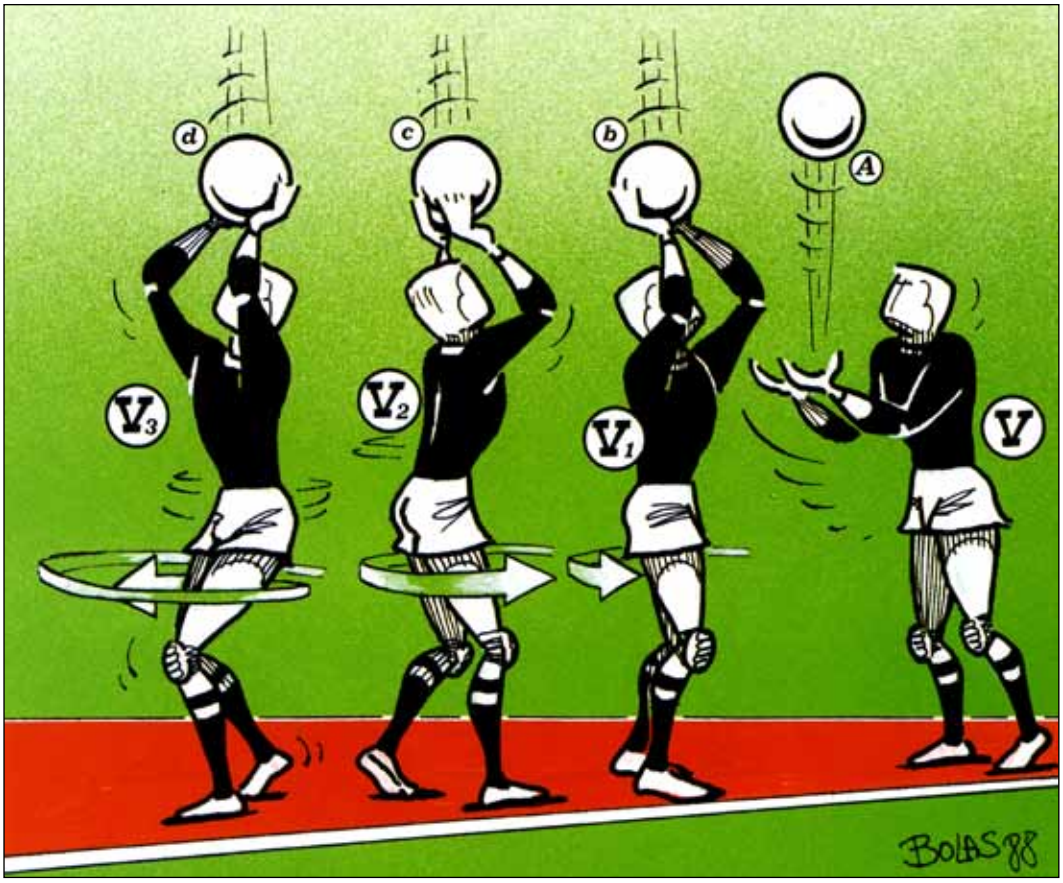


Fig. 5-5n1

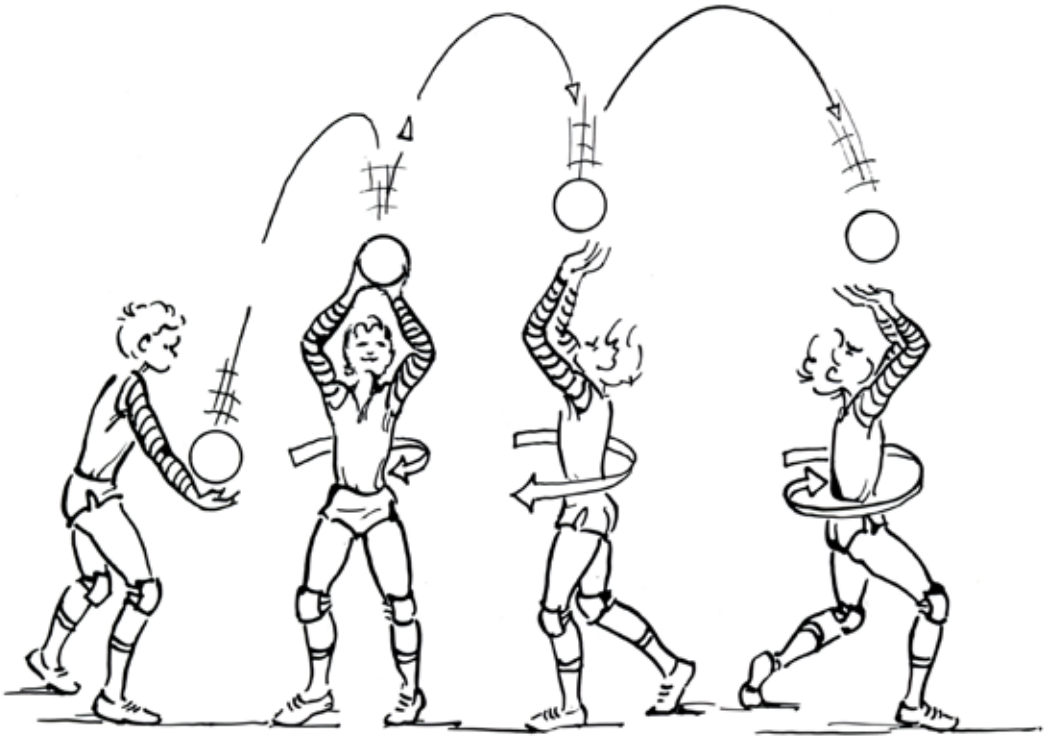


Fig. 5-5n2

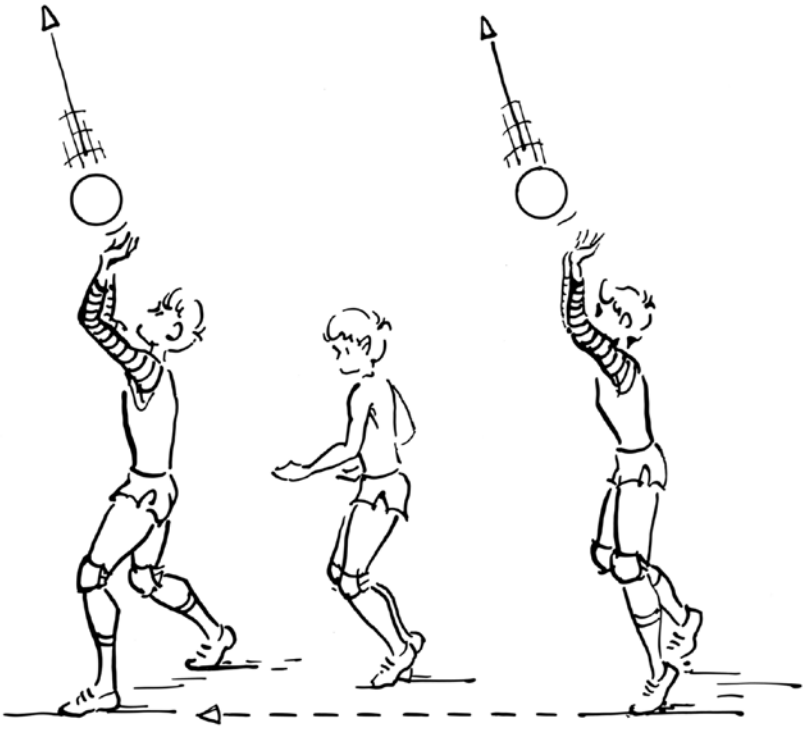


Fig. 5-5o

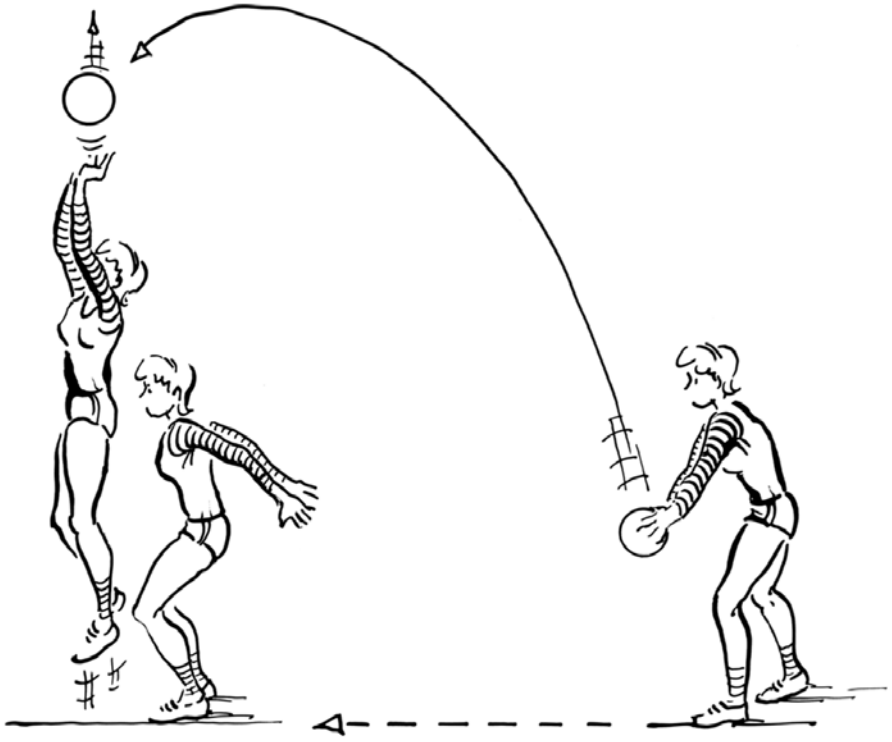


Fig. 5-5p

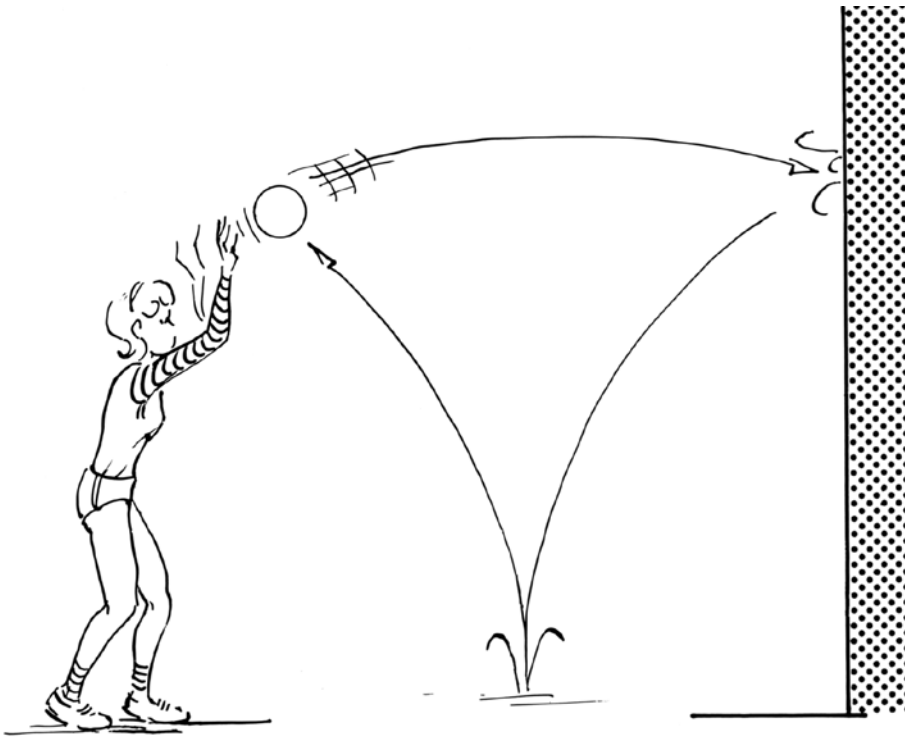


Fig. 5-5q

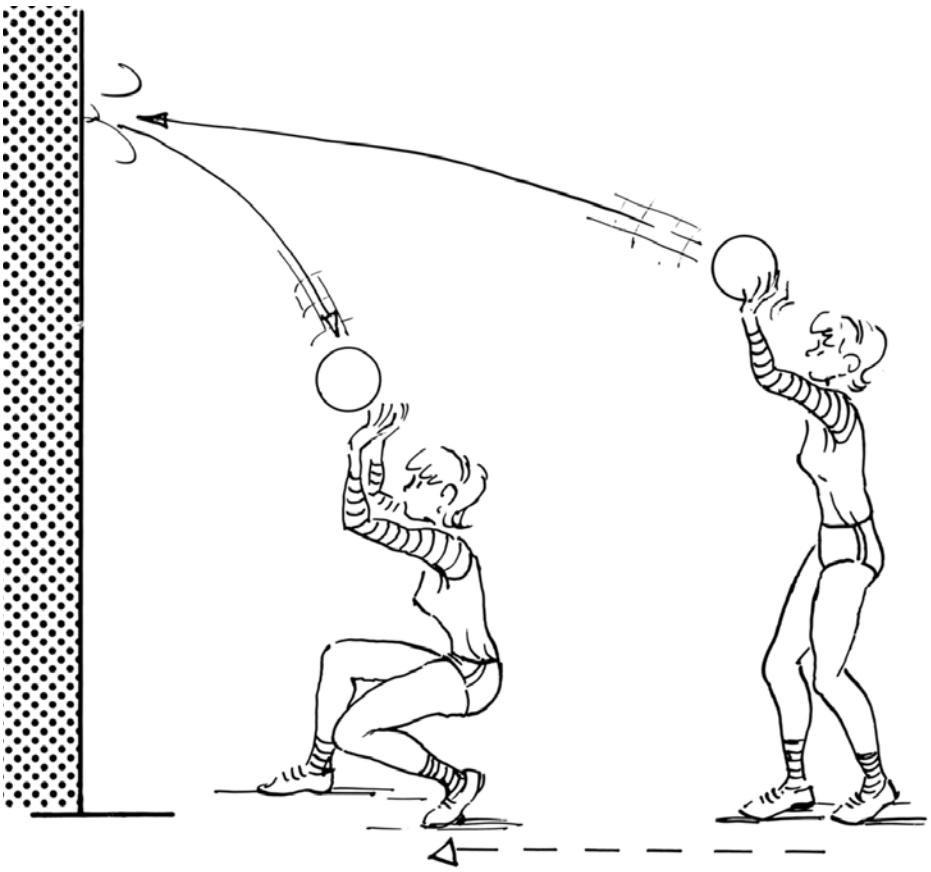


Fig. 5-5r

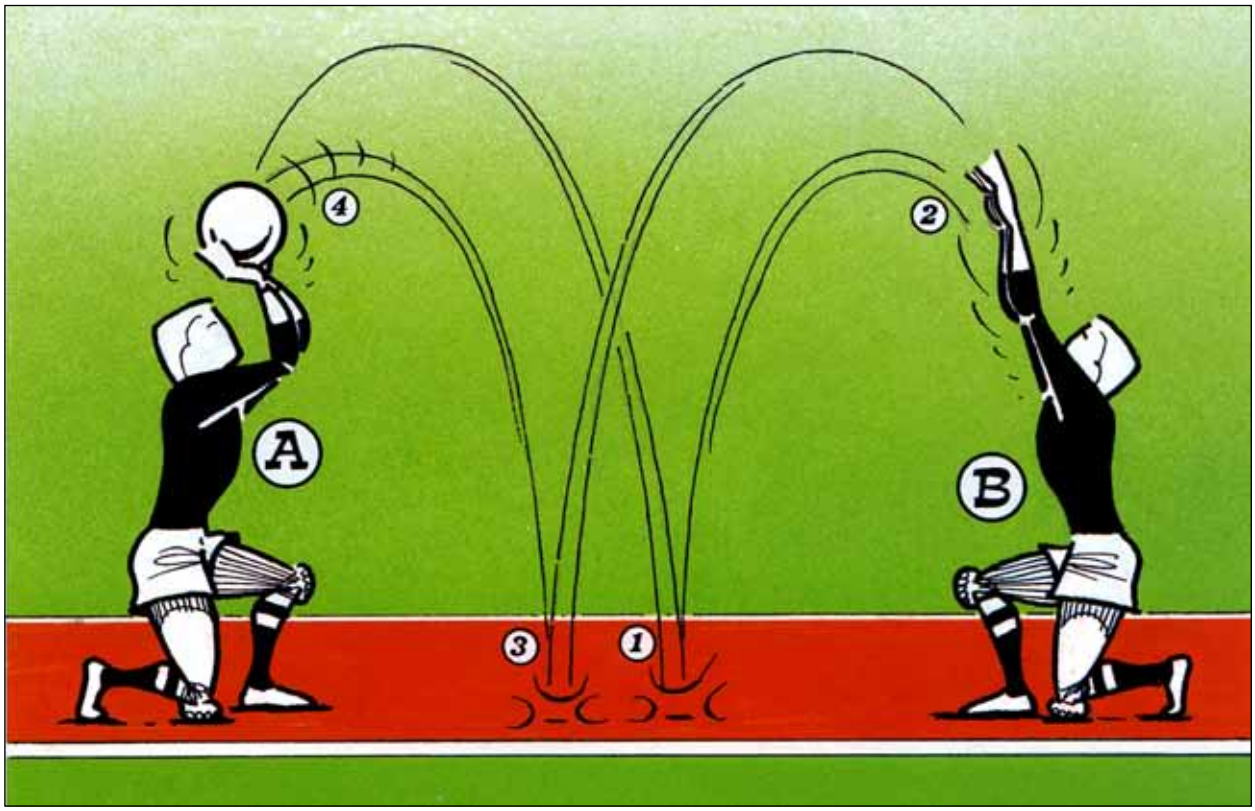


Fig. 5-5s

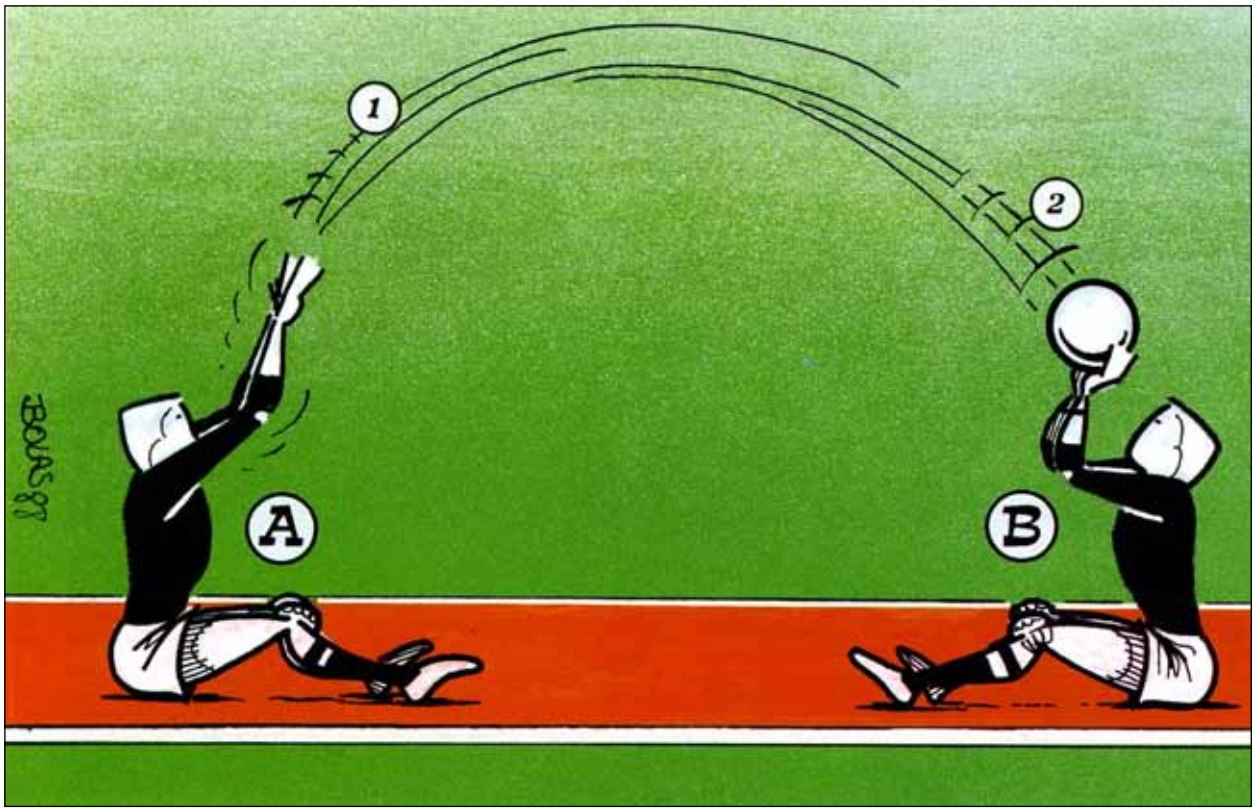


Fig. 5-5t

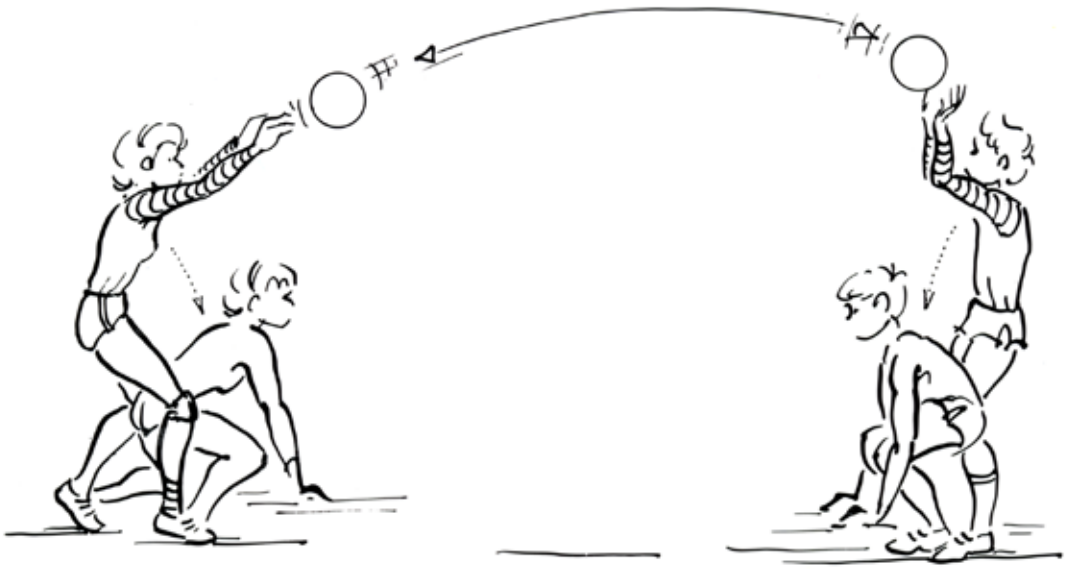


Fig. 5-5u

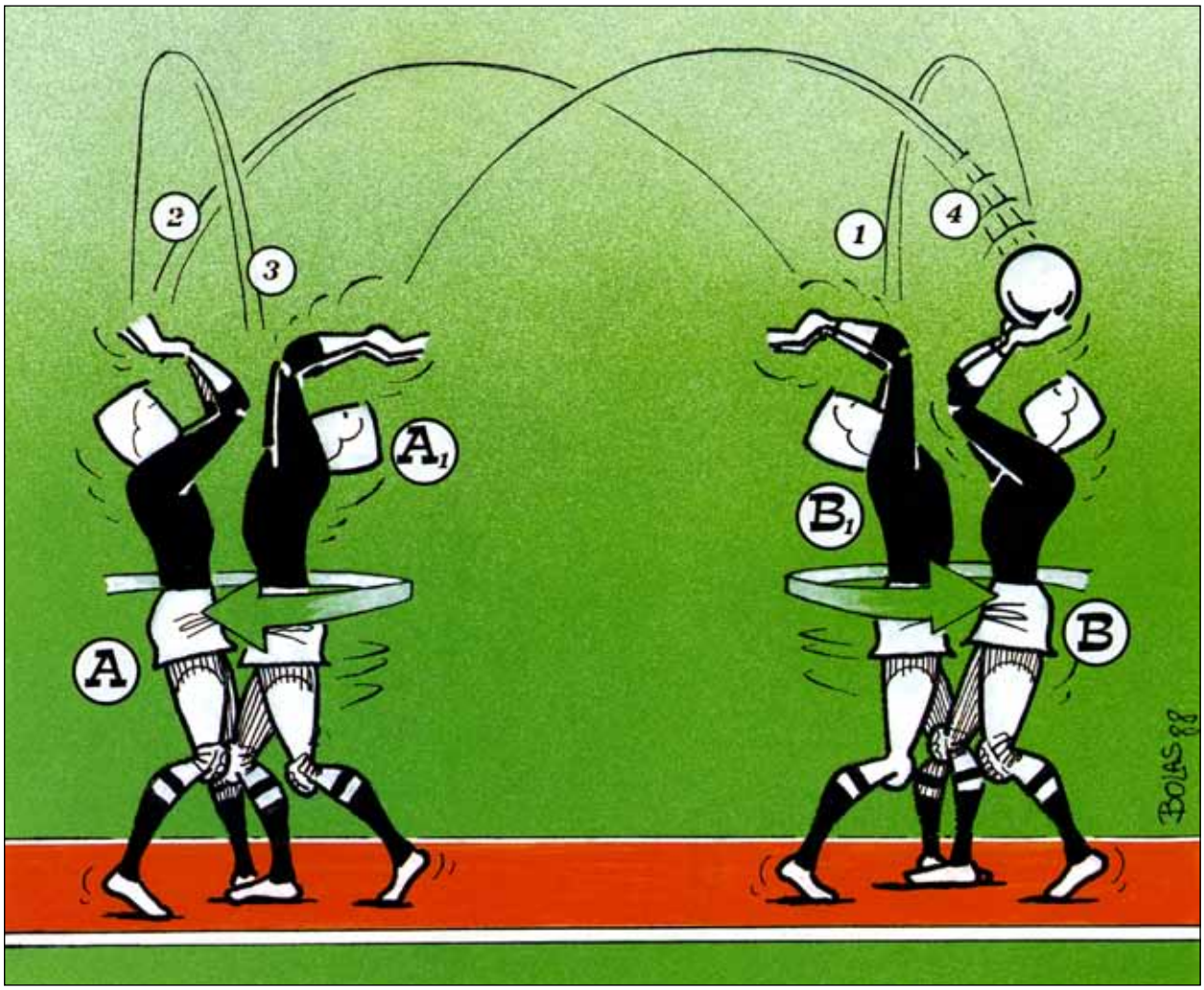


Fig. 5-5v

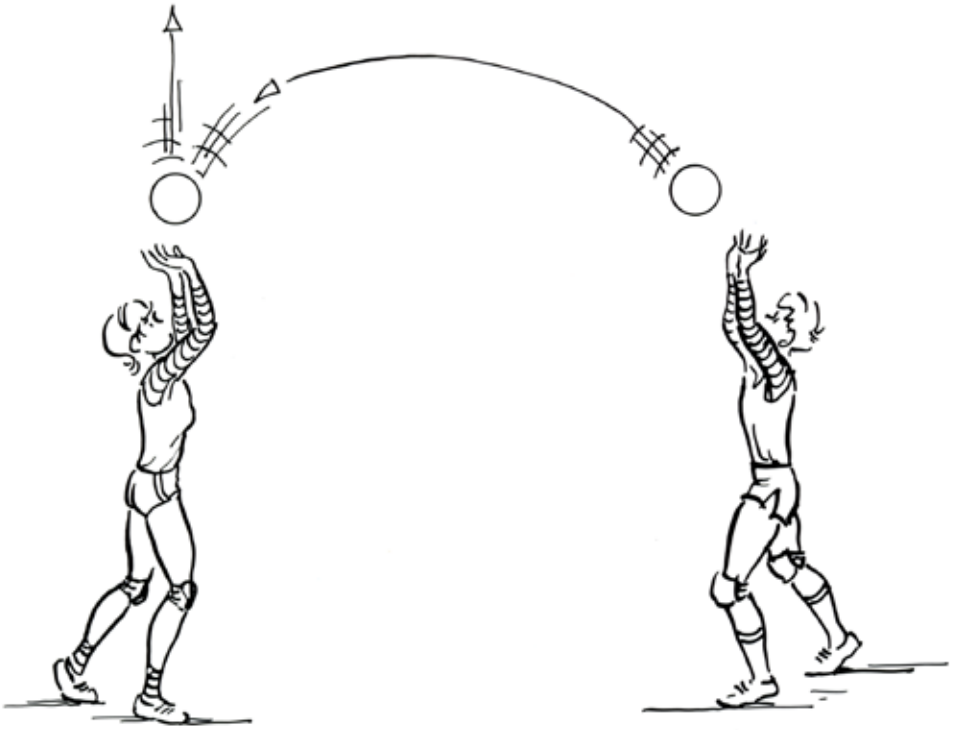


Fig. 5-5w

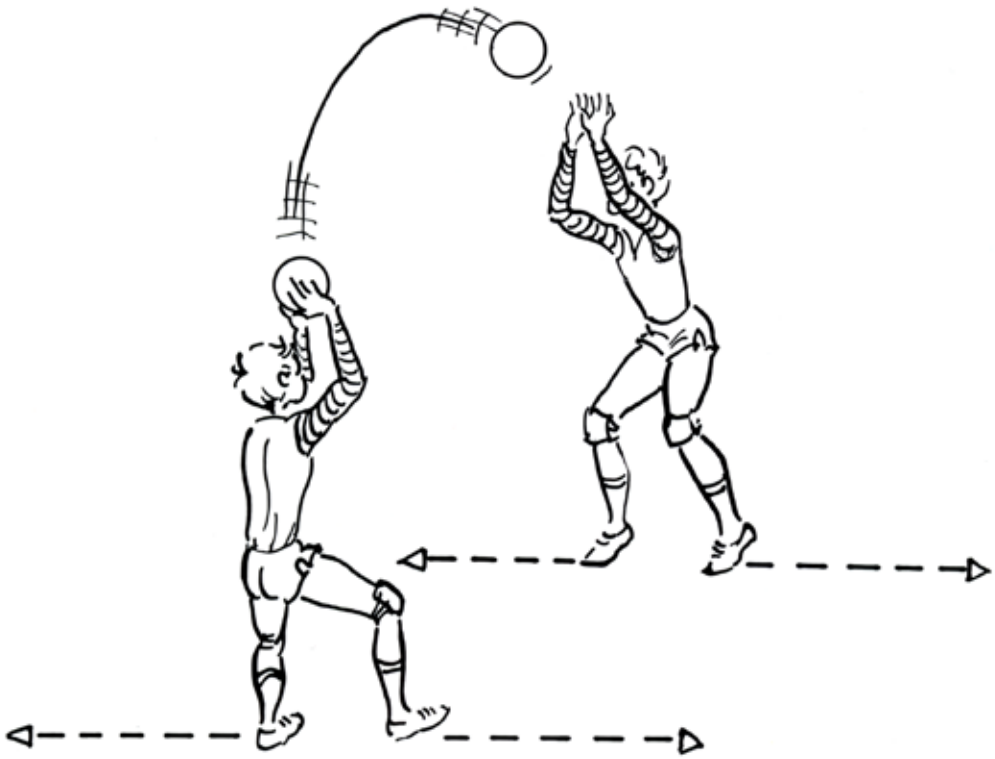


Fig. 5-5x

F. Introduction to lead-up games

a) Net Ball (Throwing and Catching Games)
Begin the game by throwing the ball into the opponent's court covering the net. Return the ball after one or two contacts by each team. - (Fig. 5-6a)

b) One bounce volley (contact the ball after one bounce)
Size of the court: 4 to 6 metres. Height of the net: 2.0 metres. Start the game by throwing the ball into the opponent's court. - (Fig. 5-6b1, Fig. 5-6b2)

c) Four Squares
Four square court: 4 to 6 metres. Hit a service from behind the service line, after one bounce by single or both underhand. Return the ball after one bounce or no bounce. Height of net and rope: 2 metres. - (Fig. 5-6c)

d) Running pass game
After hitting an underhand service, return the ball to the opponent's court by overhand or underhand pass techniques.
In case of 2-to-2, one team can contact 2 or 3 times, before its return to the other side. - (Fig. 5-6d)

e) Sequence Volleyball
Same as normal rules, but when a team returns the ball by jump return or spike actions, it gets 2 points.

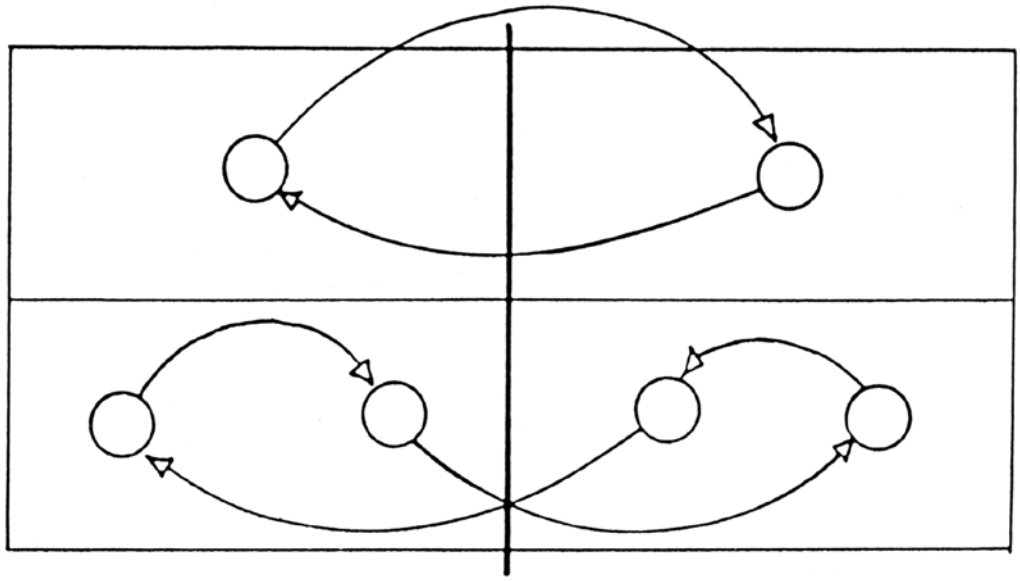


Fig. 5-6a

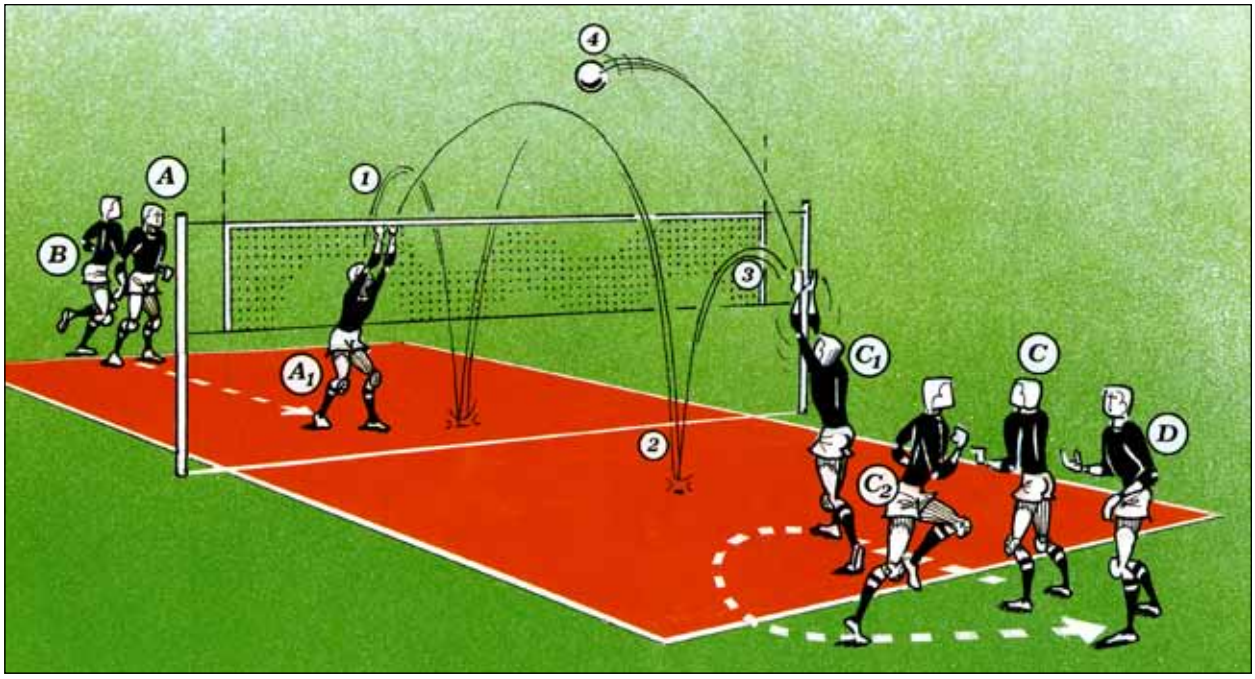


Fig. 5-6в1

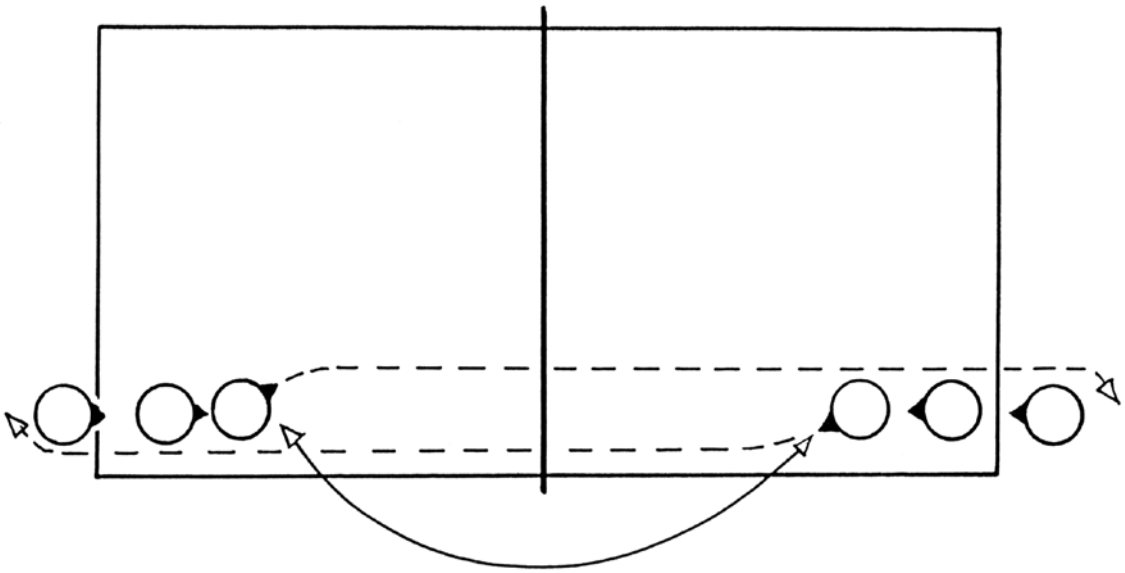


Fig. 5-6в2

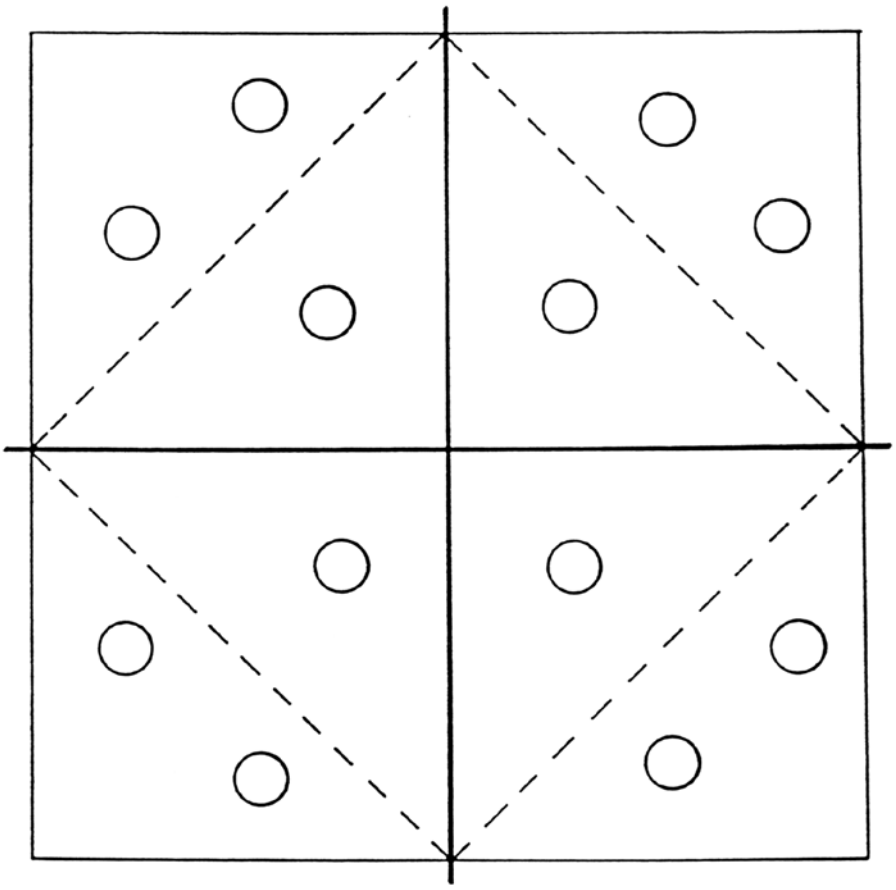


Fig. 5-6c

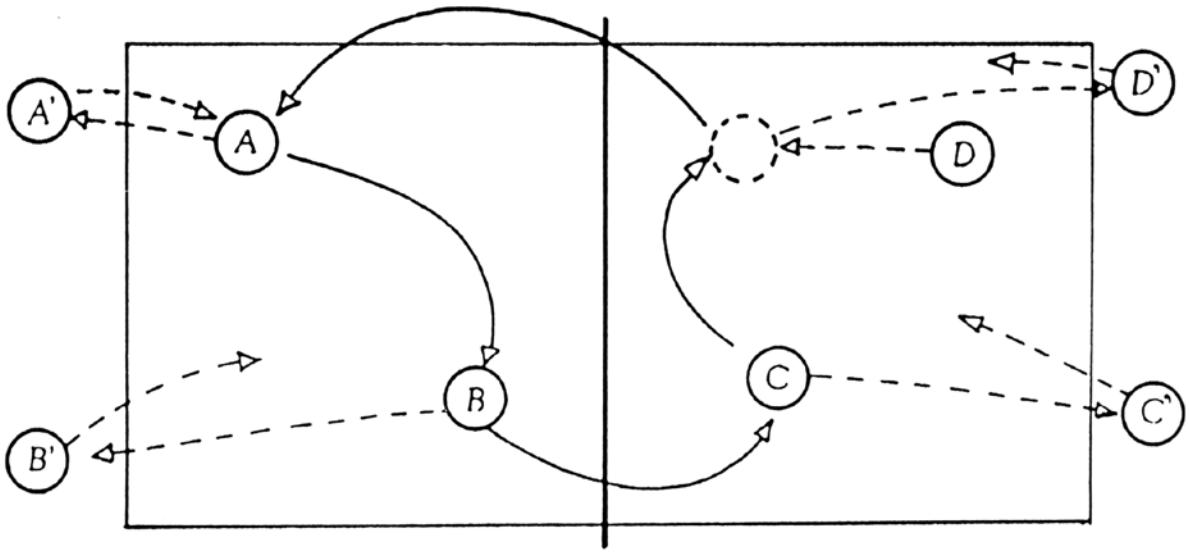


Fig. 5-6d

Chapter VI

Teaching Basic Individual Techniques

by Prof. Hiroshi Toyoda, President of Technical Commission

Players should be taught the following seven fundamental playing patterns as individual skills required in the actual Volleyball game.

When players master each fundamental playing pattern, they should be introduced to complex training methods and formation. It will be difficult to attain good team plays in the actual game without the mastery of these seven basic patterns. The coach should master the theoretical background and scientific approach of each pattern for effective explanation to players.

Basic Individual Techniques

1. Fundamental positions, postures and movements in Volleyball
2. Pass play and set-up play
3. Service
4. Spike
5. Attack reception and net recovery
6. Service reception
7. Blocking

1. Fundamental Positions, Postures and Movements in Volleyball

A. Fundamental Postures

There are two kinds of postures:

i) Front Row players' posture for quick blocking and
ii) Back Row players' posture for reception of quick attacks from opponents' court.

P 1: Posture for Front Row Players

P 2: Postures for Back Row Players

Back Row players' posture should be as follows:

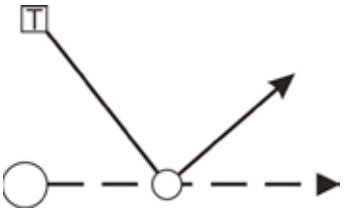
Knees should be bent with fingertips placed in front of knees. Body weight should be on balls of feet. Feet parallel or one foot in front of the other. Body weight should be placed forward as much as possible. Heels should not be on the floor.

- 1 metre forward dash from parallel feet – 0.82 seconds
- 1 metre forward dash from one foot forward – 0.82 seconds
- 1 metre forward dash from heel on the floor – 0.85 seconds

Arms should be placed as illustrated for fast reactions to the ball for the following reasons:

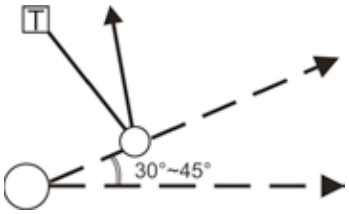
Speed of Spiked balls:

- Spiked ball (men) 27m/sec. (60.6 m.p.h.)
- From net to end line - 0.333 sec.
- Spiked ball (women) 18m/sec. (40.3 m.p.h)
- From net to end line - 0.50 seconds



Speed of arm motions in the following actions:

- From knee to shoulder 0.440 seconds
- From shoulder to knee 0.390 seconds
- From shoulder to knee (turning the wrists) 0.480 seconds



Correct fundamental posture for back court players is a very important element for accurate reception.

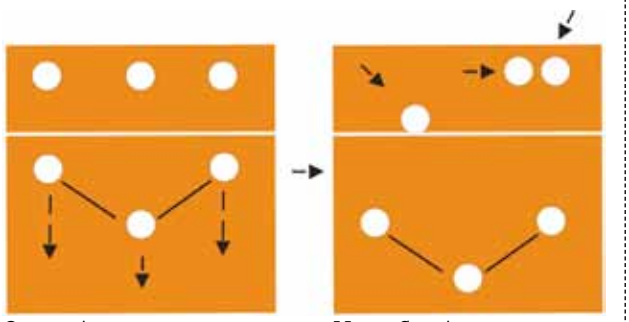
Arms held at waist with hands extended for quick reaction to spiked balls. Prediction or anticipation is very important in fast reaction to spiked balls.

P 3: Fundamental Position for Back Row Players

B. Fundamental Positions of Players

For good receptions, all players must stay in a good, suitable position on the court.

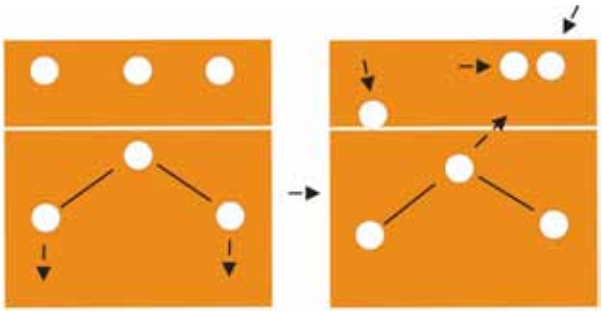
△ Quick spike reception
D 1: 0-3 Defence Formation



Quick Attack — High Set Attack

➔

△ High set spike reception
D 2: 1-2 Defence Formation



Quick Attack — High Set Attack

Table 1: Teaching Process of Movements and Directions from Basic Positions

Basic Position	Forward footwork	⇨	Crouching under the ball		⇩
	Side footwork	⇨	Movement with side-steps Movement with cross steps Running towards the ball		⇩
	Backward footwork	⇨	Stepping backwards Moving 45° backwards with cross step Turn and run forward		⇩
					⇩
	Flying	⇦	Backward roll Diving Rolling	⇦ Stopping techniques	

C. Forward Movements

Run forward and stop in a low position when players pass or receive near the floor.

When players want to return or pass backward, they try a backward roll.

When players master the low position, the coach can then teach diving as an advanced technique for the following reasons:

- 3 m dash forward – 1.33 sec
- 3 m dive forward – 1.21 sec
- 6 m dash forward – 1.94 sec
- 6 m dive forward – 1.87 sec
  (in the case of women players)

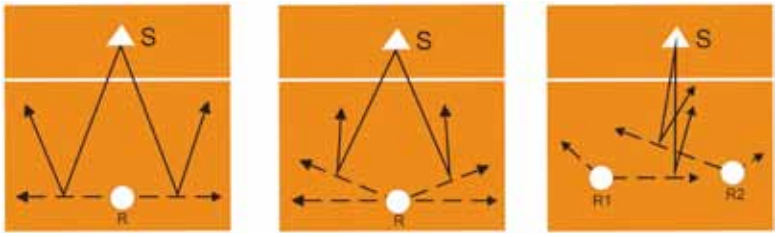
P 4: Forward Movement

P 5: Forward Movement ➔ Low Position Step

P 5: Forward Movement ➔ Low Position Step (Details)

D. Sideward Movement (set-up, reception, spike and block)

Players should move about 30 to 45 degrees diagonally on both sides as illustrated in the fig II-D 1. They should not move to the side as the ball bounces outside depending on its return angle.



D 3: Direction of Back Court Players

When they move sideways 30 ~ 45 degrees diagonally there are three kinds of footwork that players can use:

– Run to the side and stop by using a shuffle step.
– Run to the side using cross-step and stop by using a shuffle step.
– Run to the side, dash to the ball and stop (braking foot work).

P 6: Shuffle Step

P 7: Cross Step

Rolling and flying techniques are taught to the more advanced players for the following reasons:

- 3 m 45 diagonal movement using shuffle step 1.51 sec
- 3 m 45 diagonal movement using cross step 1.42 sec
- 3 m 45 diagonal movement using rolling 1.30 sec
- 3 m 45 diagonal movement choosing left or right after judgment 1.61 sec

When players move to the side more than three steps, the cross-step is useful for quick movements as shown in the above required times.

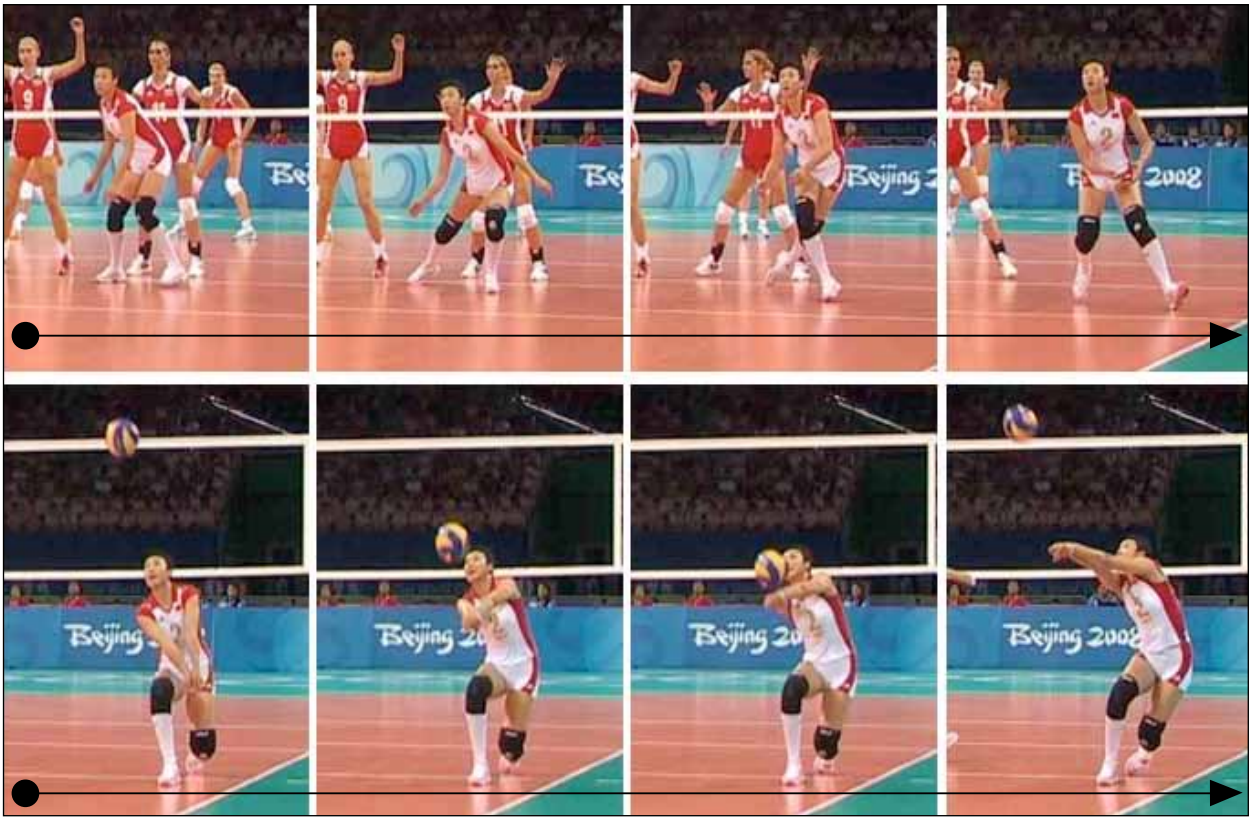
E. Moving backwards

When a ball falls just in front of a player in a high position, he/she has to move backwards choosing an underhand reception or overhand reception.

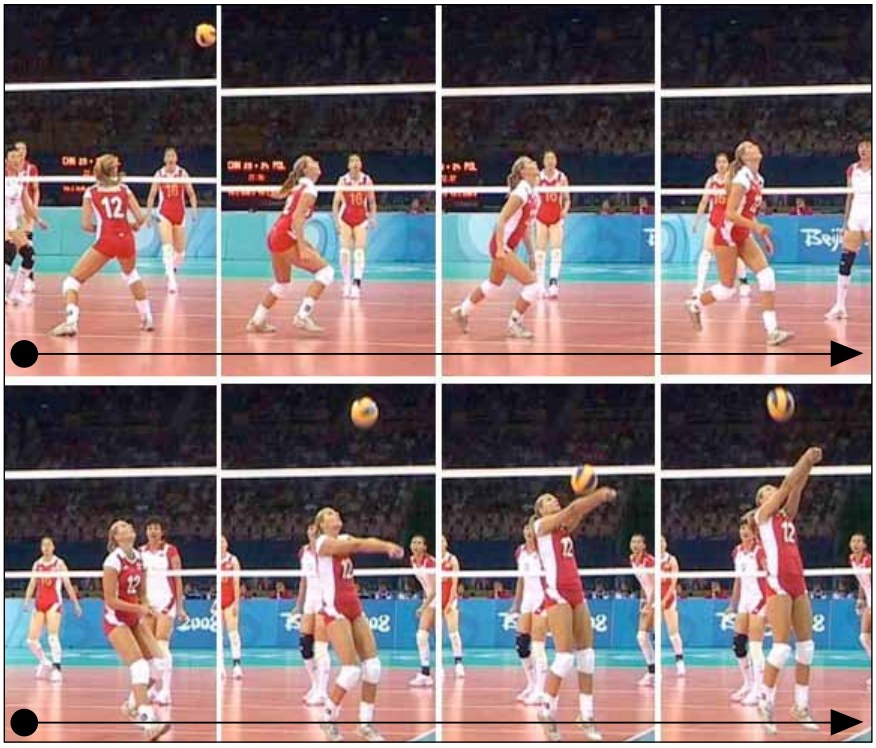
The Diagrams here below illustrate the three methods for underhand pass or reception.

Step backward slowly, keep an eye on the ball, keep low.

P 8: Move back with Shoulders Facing to the Target Zone



P 9: 45° Back Movement Using a Cross Step



P 10: Chase Ball with the Back Facing the Target Zone

P 10: Move with Back to Target and Pass (detail)

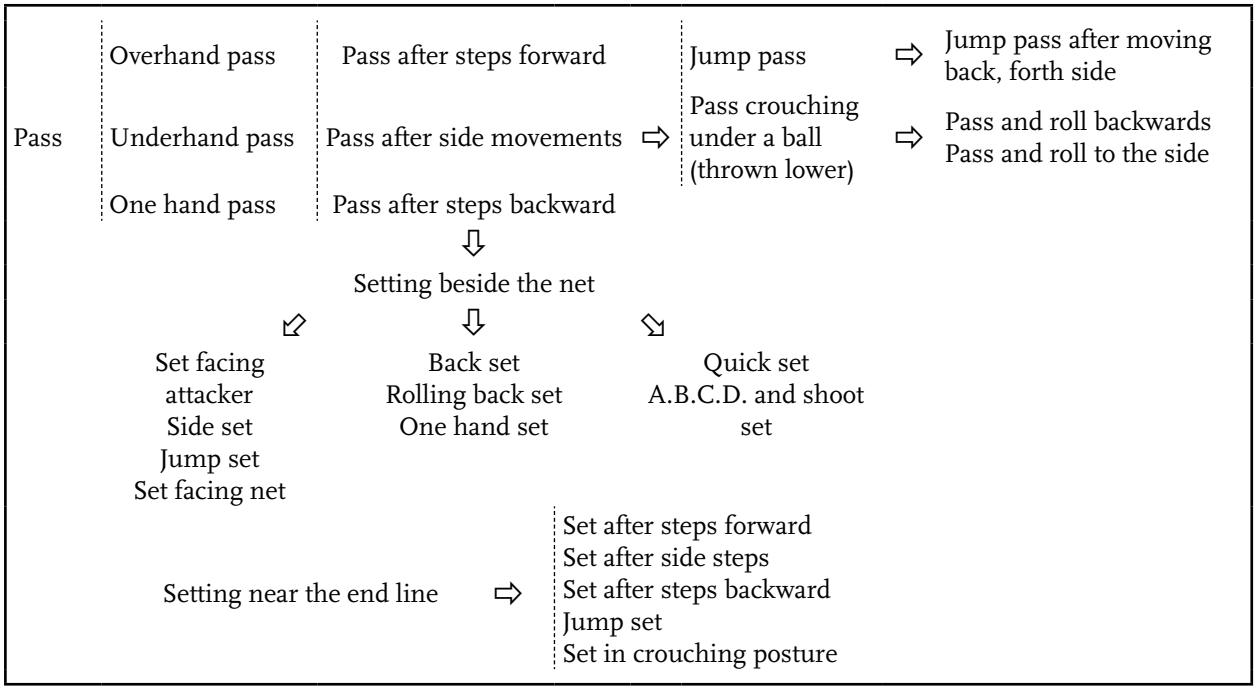
F. Jumping (set-up, spike and blocking)

Quickly move under the ball and keep low. There are three kinds of steps before take off: left and right, right and left, both at the same time. Players should master these three steps for future improvement.

These footwork patterns should be practised and highly developed. Footwork skill is the most important factor in all Volleyball playing patterns.

2. Pass play and set-up play

Table 2: Teaching Process for Pass and Set-ups



A. Coaching hints on overhand pass

- Quickly move to the ball and face the direction where the pass is intended.
- Contact the ball with the inner surface of the fingers.
- Stop the ball with thumbs and forefingers.

P 11: Arm and Finger Position

As the ball is stopped with the thumbs and forefingers, the wrists are bent backwards and elbows are bent.

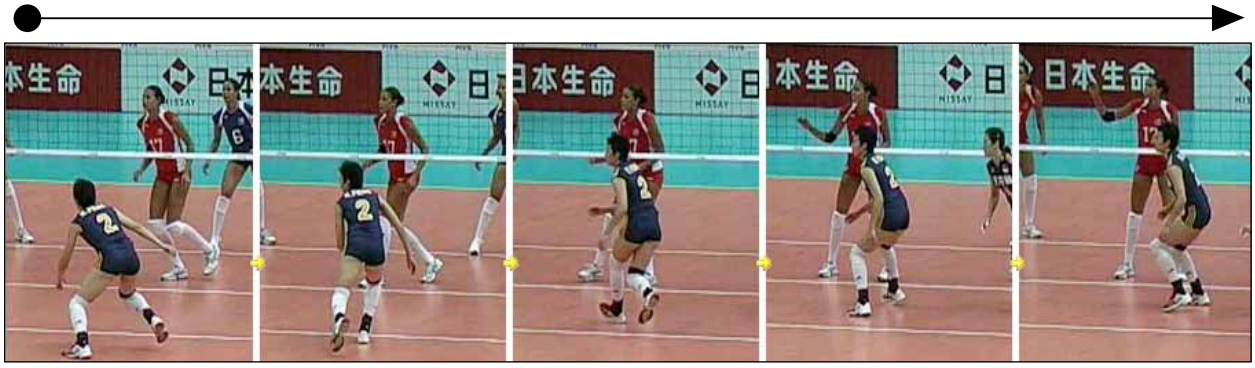
Push the ball upward with the “spring” of fingers, wrists, elbows, waist, knees and ankles.

P 12: Overhand Pass Moving Forward

P 13: Overhand Pass in Low Knee Position

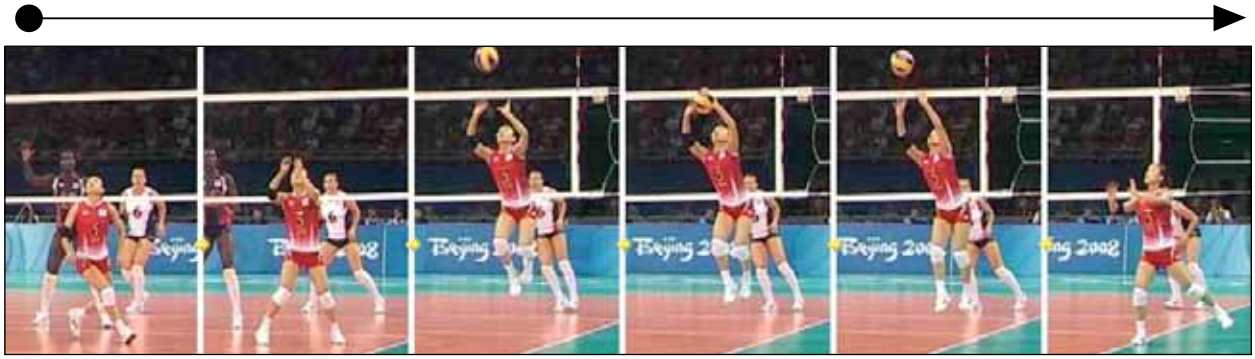
P 14: Back Pass Moving Forward

P 15: Overhand Pass Moving with Shuffle Steps



P 16: Braking Foot (A3)

P 17: Overhand Moving Pass



P 18: Jump Pass

P 19: Overhand Pass Moving Backwards

P 20 A: Overhand Pass Moving Back with Cross Step

P 20 B: Back Pass After Moving to the Ball

B. Coaching Hints on Underhand Pass

Extend wrist and elbows at an angle with the trunk.

Angles of ball deflection in underhand pass. Should be in P 21 (1)

P 21: Angle of Forearm in Underhand Pass

The ball will return according to the angle of stretching by the whole body.

In photo 1 below, the ball will deflect upward

In photo 2 below, the ball will deflect forward and downward

C. Coaching Hints for Setting

The purpose of the set is to enable an attack. The ball should be set 50 to 100 cm away from the net and at an adequate height above the net. Short setting, back setting and advanced techniques in setting should be used so that the opposing team will not be ready for these attacks. For a deceptive setting direction, so the opposing team will not be able to anticipate the direction of the ball, slightly arch the back with the chest facing upward (set-posture) especially from low body angle positions. In the jump set, players should contact the ball above the forehead. In setting, accuracy of height and direction of the ball is essential for the spiker (P 21).

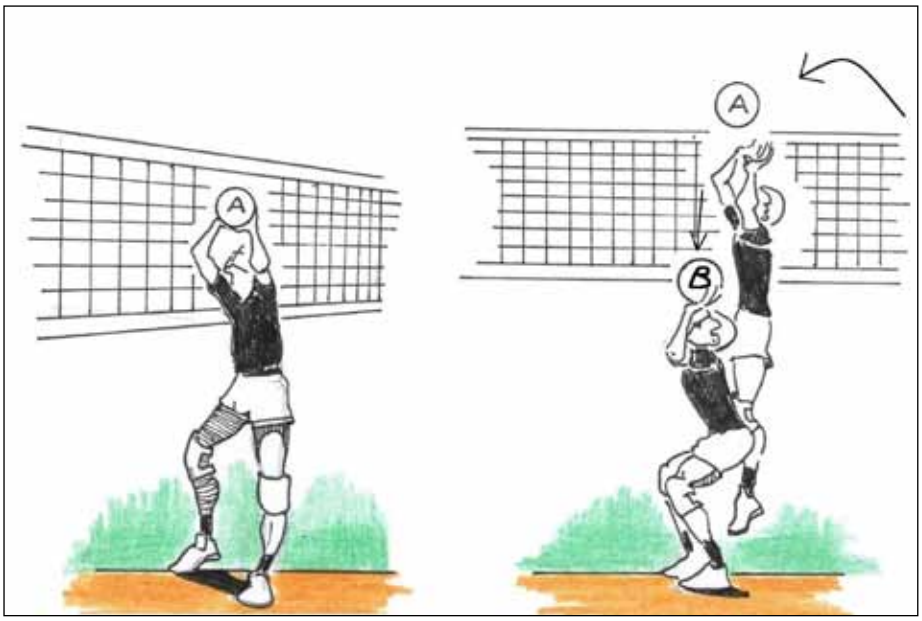
Positions where the setter can contact a passed ball relative to the ball's trajectory are:

– When the ball is travelling over the net, a jump set can be made only at one point.

– When the ball is travelling towards the lower part of the net or under the net, a set can be made at one point only.

– When the ball is high enough, a set can be made between point A and point B within the limits of the overhand pass (D 4 B). The set can be made by the spiker simply adjusting his timing.

The setter has to adjust timing according to the approach of quick spiker in this case.

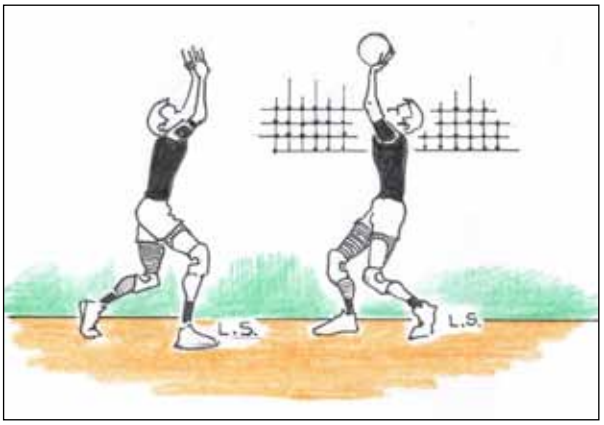


D 4: Set-up Positions – A B

△ Evaluation of Setting Play

– Aiming at the spiker's target above the net
– Ability to adjust timing of the set with the spiker
– Ability not to give away the set-up direction to the opponent's blockers
– Ability to judge the opposing team's blockers' height and skill
– Ability to determine, based on the game's situation, the best player to set the ball to and, when and how, to let him attack effectively

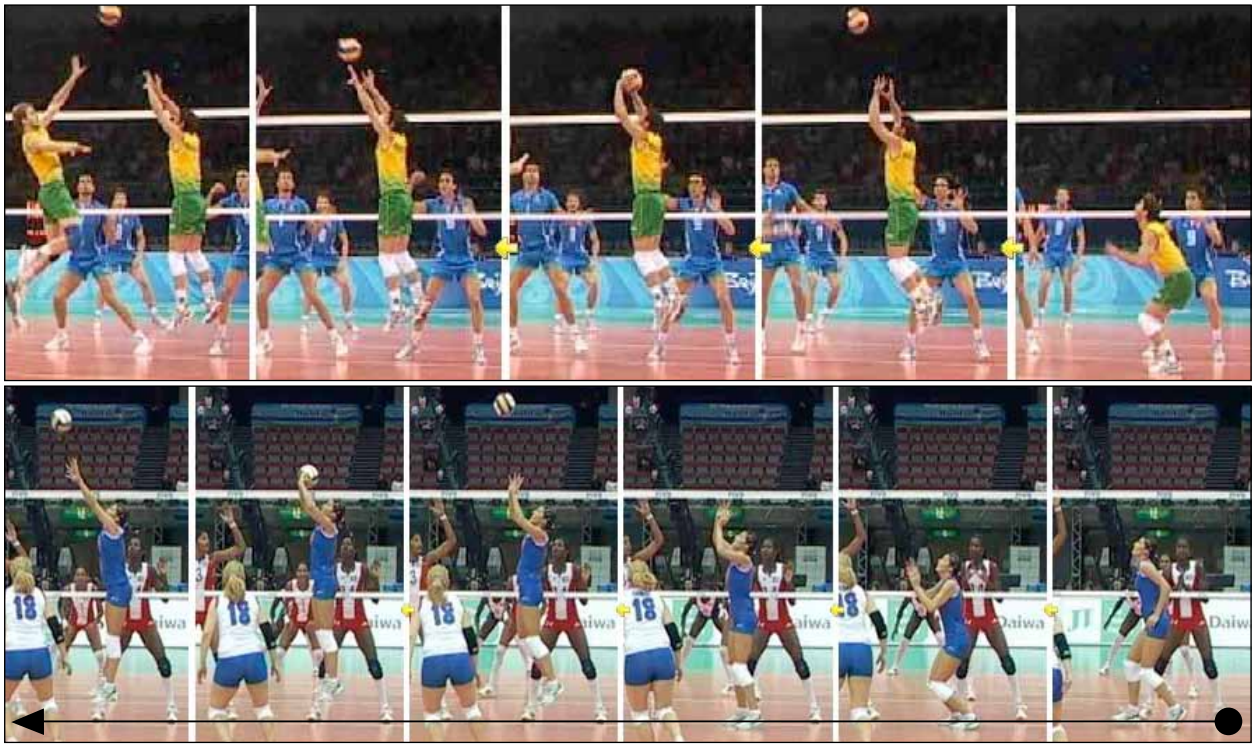
P 22: Set Posture in Low Position



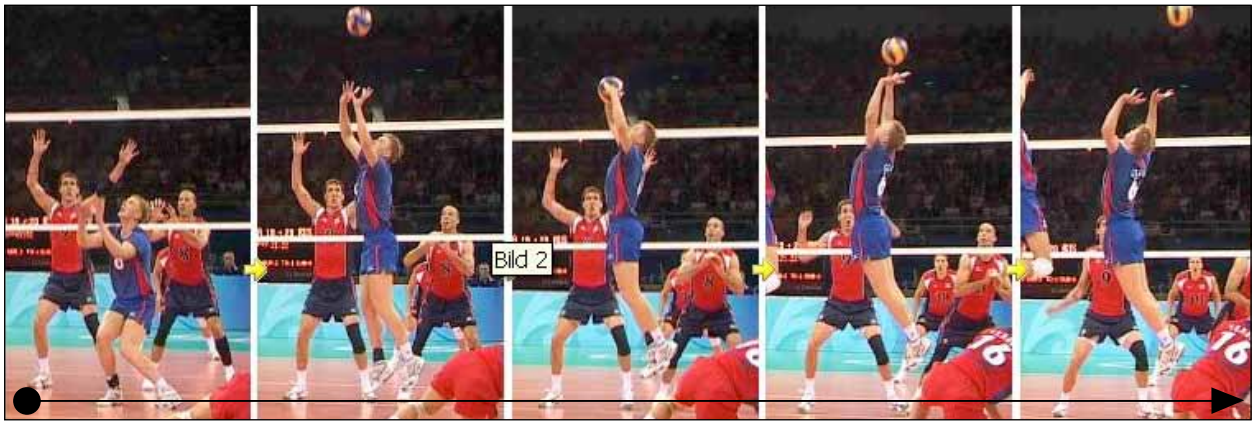
P 23: Basic Set Posture

P 24: For Set

P 25: Back Set

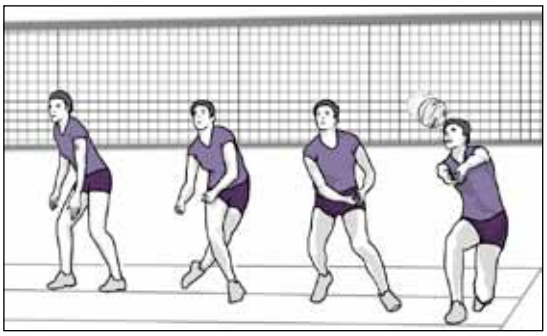


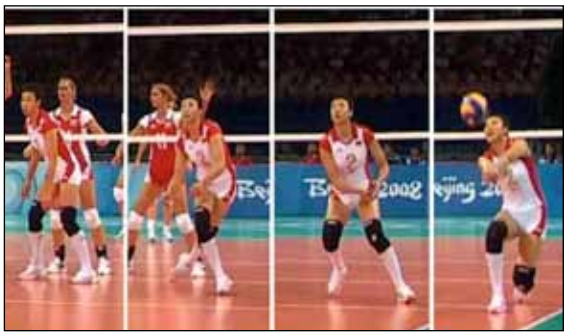
P 26: Jump Set



P 27: Jump Back Set

P 28: Shoot Set





P 29: Underhand Set

3. Service

A. Required conditions

The most important thing in serving is to control ball speed and trajectory. It is important to serve the ball into the opponents' court without error for if the service is faulted, one point is called. A suitable course and sudden changes of the ball trajectory will be effective, but fast serves often result in errors. Fast serves depend on the condition of the game. At the same time, players should have their own specialities in form, kind of ball trajectories and their speed in serving. The coach should know the strengths of his players in serving.

B. Coaching Process in Service

Arm swing training and concretion of form ⇨ Set-up training ⇨ Try each service ⇨

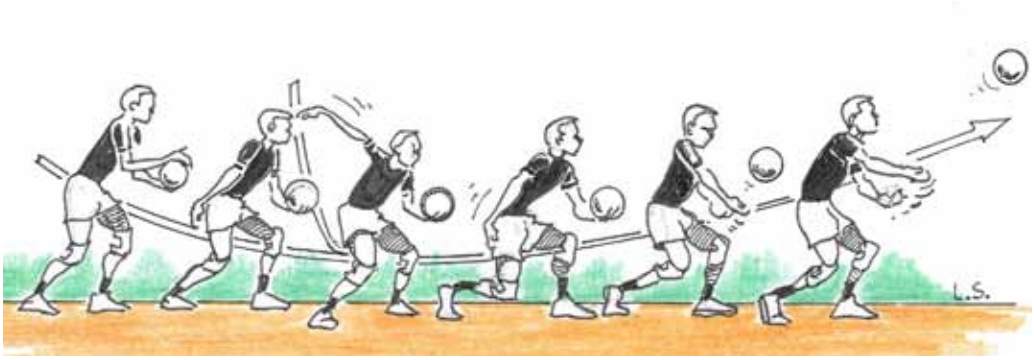
Decision of one service style ⇩

⇦

- Underhand service
- Floater service (tennis style)
- Overhand change-up service
- Overhand drive service (round house)
- Jumping service (Floating or Drive)
- Back spike service

⇩

Controlling service (Set-up Form) ⇨ Placing of service (Direction, Depth) ⇨ Changes in direction in long and short services



P 30: Underhand Serve

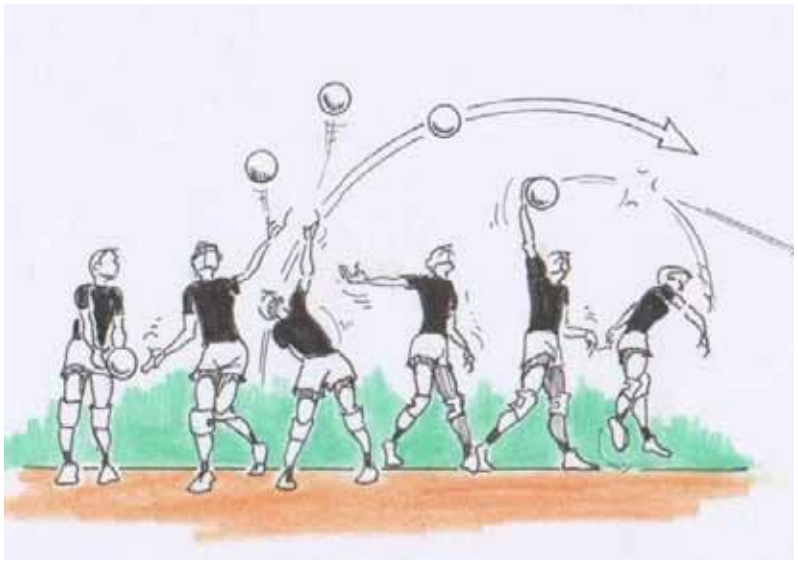
C. Control of Service

The following two elements are essential for good service control:

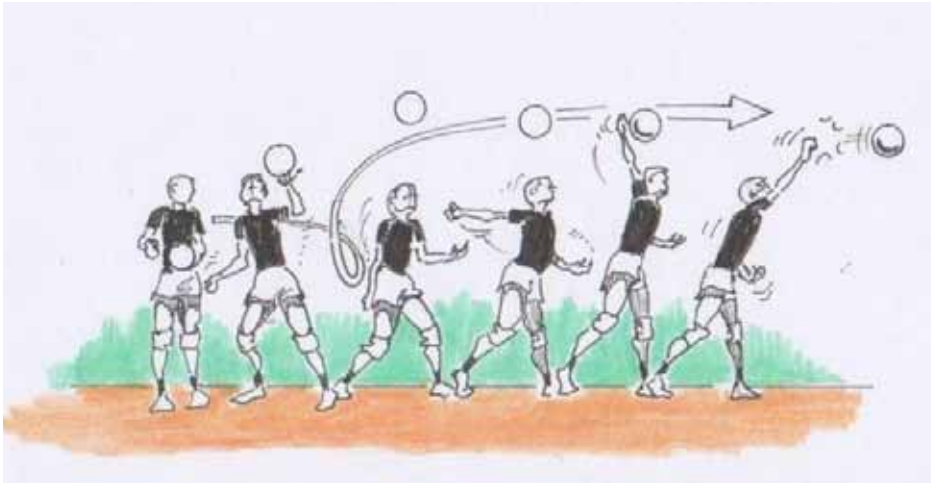
a) Always set up the ball
b) Timing and rhythm from set-up and hitting the ball
c) Practice controlling the serve, ball direction and distance (long or short). Direction change (straight or diagonal) is done by changing the front foot position, not by the toss or the arm swing (P 31).

P 31: Foot positions and Service Direction
(For Overhand Service)

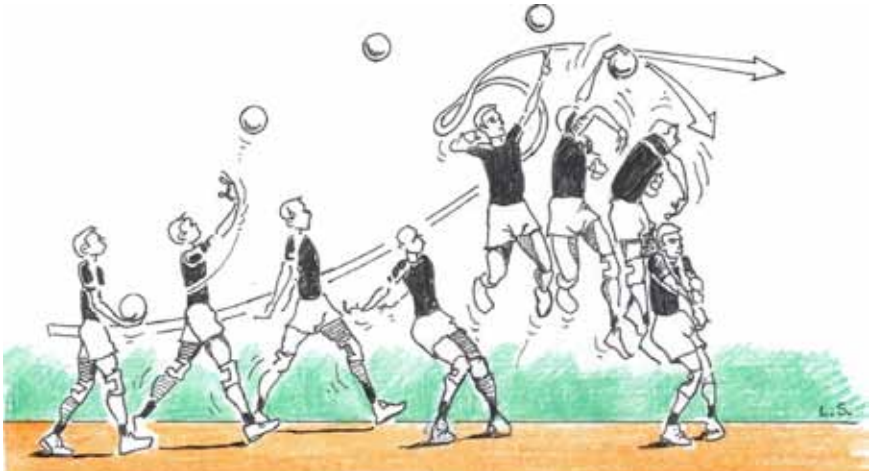
P 32: Float Service



P 33: Overhand Spin Change-up Service

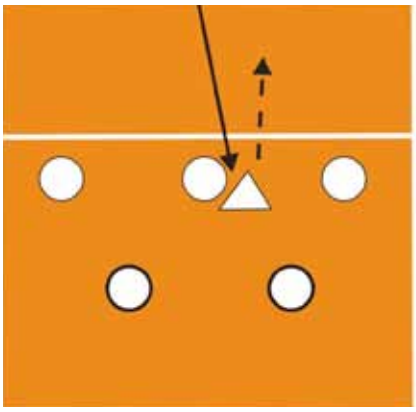


P 34: Overhand Spin Service

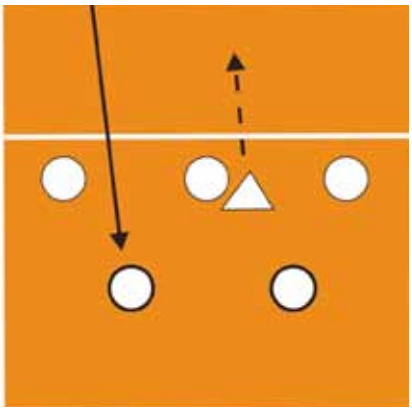


Jump Spike Spin Serve

d) Aim at the best or quickest spiker. This may cause the spiker to make an error in the timing of his approach. If this happens, it will cause a negative psychological effect on the team and the players' concentration will be off in the next play (D 5, D 6).

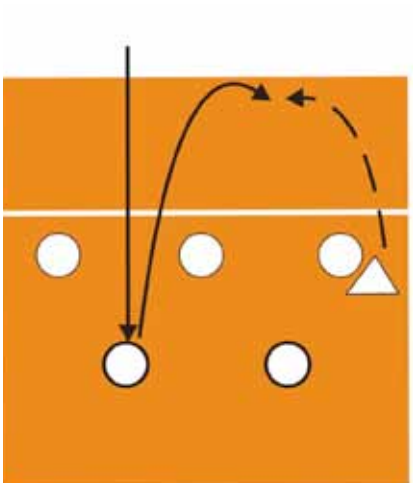


D 5: Towards Setter or Quick Spiker

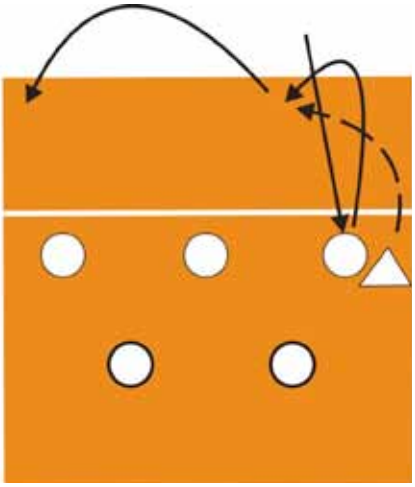


D 6: Towards Ace Spiker

e) If the setter is weak in back setting, aim in the opposite direction of where he intends to set the ball. Service is aimed at the spot where the back set will be made. The resulting set will be irregular making a quick attack difficult (D 8).



D 7: Easy for Setter



D 8: Difficult for Setter

Aim at the substituted player because he will be nervous and will not be in tune with the other players and is therefore apt to make a mistake.

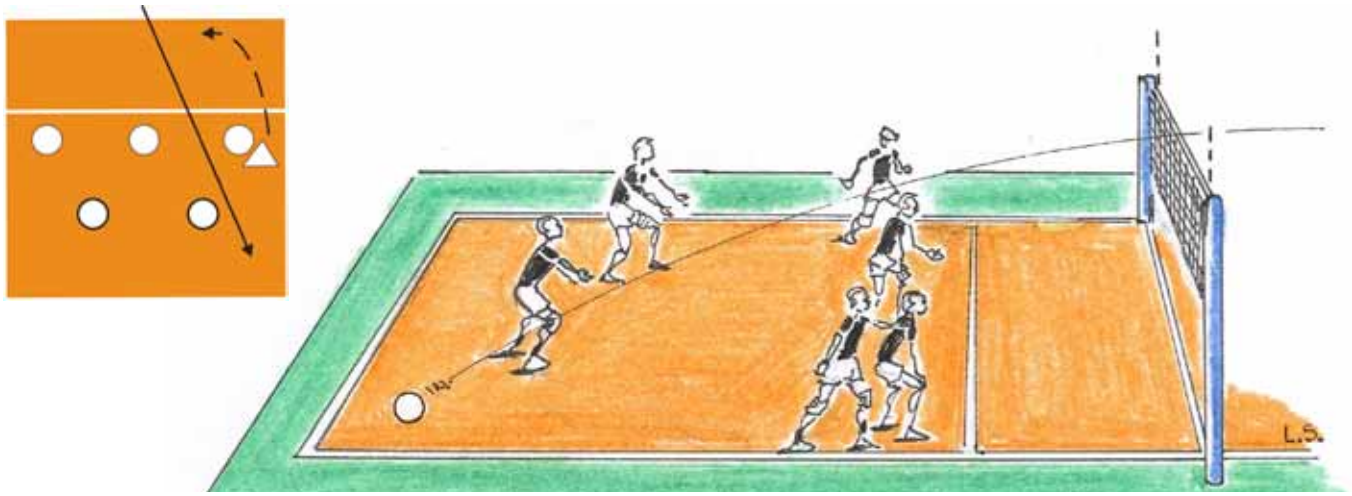
D. Evaluation of Effective Service and Desirable Conditions in Service

Scoring point (3 points)

Getting a free or easy ball (2 points)

Opponents not able to pass received ball in attack area to prevent quick attacks (1 point)

Final Score = $\frac{\text{Total Points}}{\text{Number of all services}}$



P 35: Service Control Aiming at Corner of the Court

4. Spike

A. Structure of Spike Movement

a) Approach from spiker's position
b) Take-off and jump
c) Arm motion and spiking form
d) Landing form and moving into suitable position for next play

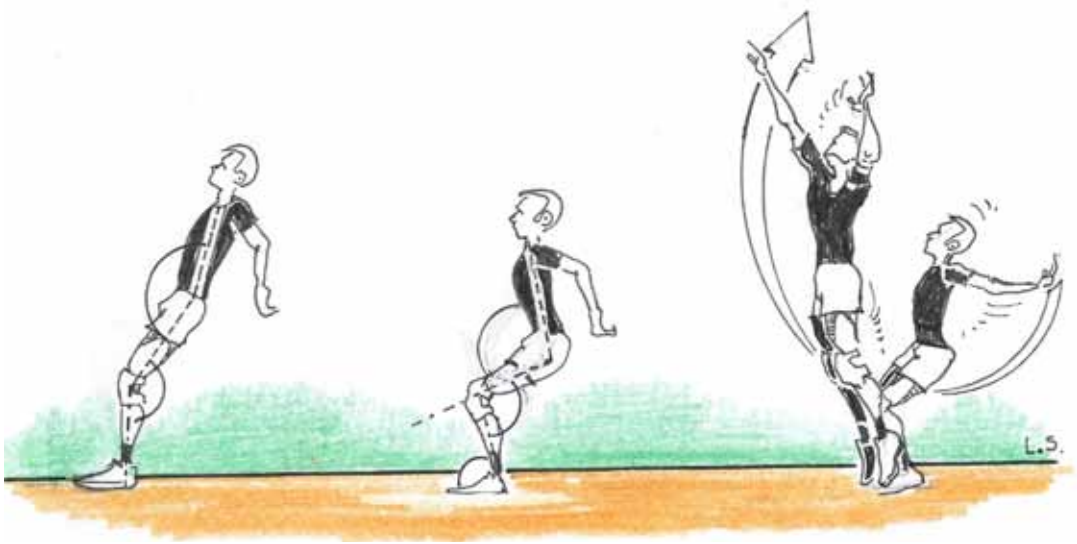
B. Coaching Process of Spike Techniques

△ Arm motion for spike	⇨	Approach	⇨	Take-off	⇨	Jump and catch the ball over the net	⇩
Jump and hit the ball over the net	⇦	Soft spike (Feint play) (Tip ball)	⇦	⇦	⇦	Jump and throw the ball over the net	
⇩							
Spike the ball set on top of the net	⇨	Quick Spike (A,B,C,D) from a shoot set	⇨	↘			
⇩							
How to move in the most suitable position before set-up	⇦	Spike the ball set from the back court	⇦	Spike the ball set at a long distance from the setter			
⇩							
Spike the ball in various directions							
⇩							
↳	⇨	Spike in various directions changing the starting positions Spike in various directions from a curved approach Spike in various directions from a change of direction in take-off					
↰		⇦	↲				
Mastering of three hitting points for changing directions		⇨	⇨	Wipe-off play (blocked-out)			
				⇩			
Balance smash		⇦	⇦	Rebound play			

C. Angle of Body at Take-off For a Better Jump

In order to jump higher, players should get in the best body position before take-off. If players bend their bodies too much or too little, they cannot jump higher at take-off. The most suitable body positions are illustrated in the fig. 9. Good jumps require powerful muscular coordination.

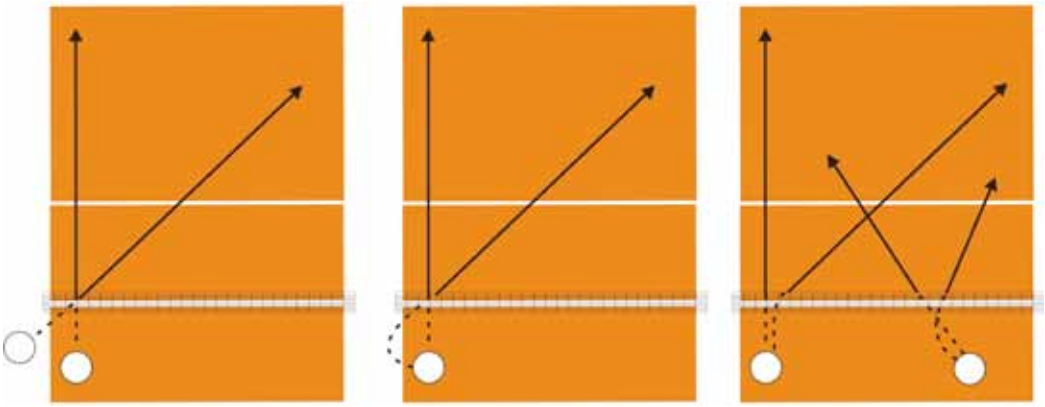
P 36: Body Angle Before Jump



Wrong Angle Best Angle Movement of the Arm Swing

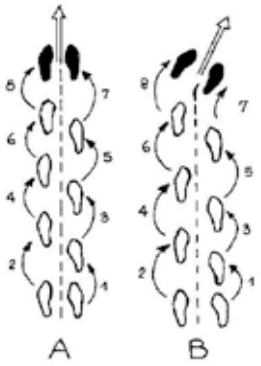
D. Three Steps in Directing the Spike Course

After a straight approach to the net, spike down the line. Then, after a 60 degree-curved approach to the net (from outside the side line), spike cross-court (A).
After a straight approach to the net, spike down the line. Return to the first position and go around in an approach to spike cross-court (B).
First, try to spike down the line, then, using the same approach, spike cross-court by changing steps at the take-off (C) and D 11.

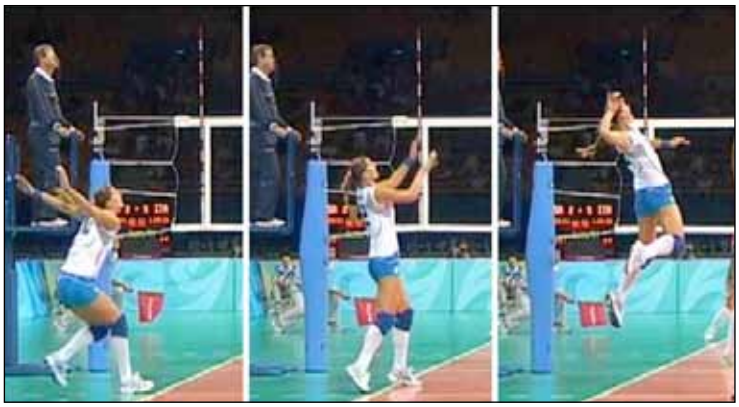


(A) (B) (C)

D 9: Change of Spike Directions Using Approach

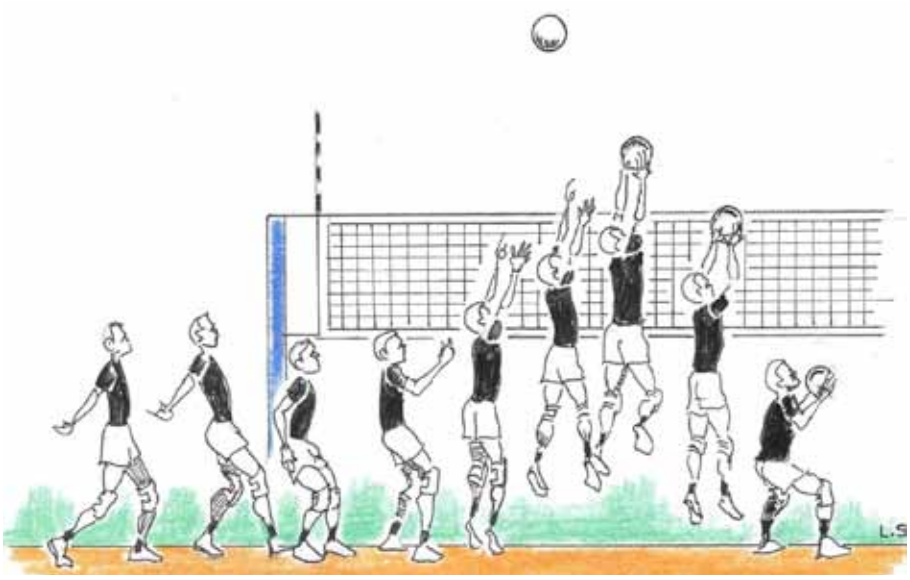


D 10: Cross Step Turn For Right Hand Approach



P 37 A: Basic Spike Direction

P 37 B: Arm Swing in Spike



P 37 C: Jump and Catch

P 37 D: Spike From in the Air

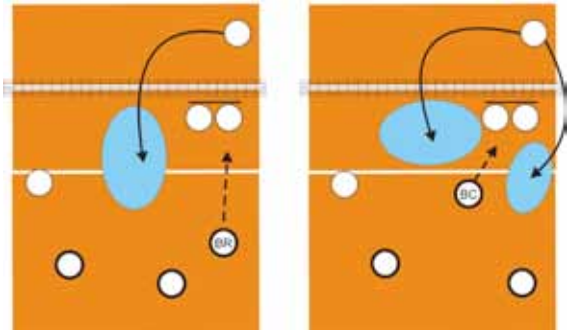
P 37 E: Cross Direction Spike

P 37 F: Straight/Line Direction Spike

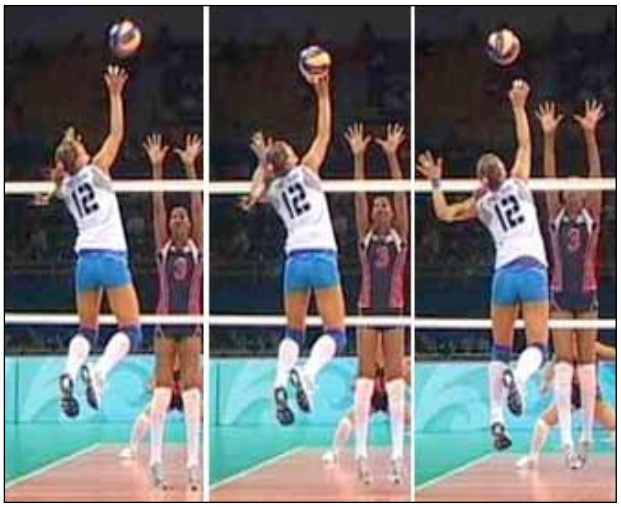
E. Soft Spike (Tip ball)

Sometimes soft ball spikes are more effective than hard spikes in the actual game. All teams have weak points in soft spikes or tip ball. As illustrated in the following diagram, there is a need for special training in utilizing soft spike tactics in some phases of the game (P 38) II-D9, II-D10.

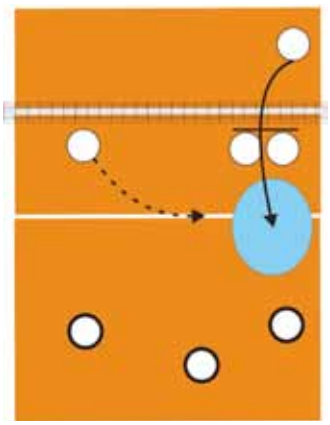
P 38: Tip Ball Attack



D 11: Two Locations for Effective Tip Ball



P 39: Tip Ball Behind Blockers



F. Spiking Techniques Against Strong Blockers

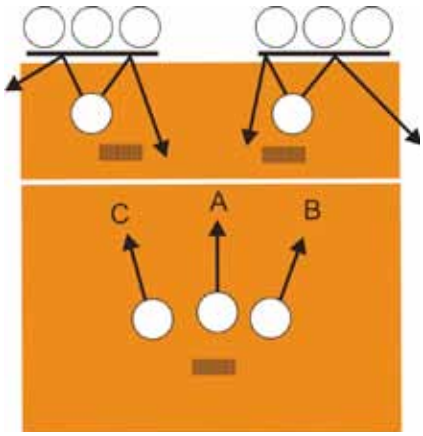
When a high, strong blocker has been set over the net, spikers should use one of the following two ways to prevent block points:

– Use three hitting points and block-out techniques (P 40, D 12)
– Attempt to utilize the opponent's block or rebound play

Three Hitting Points

P 40: Three Hitting Points (front)

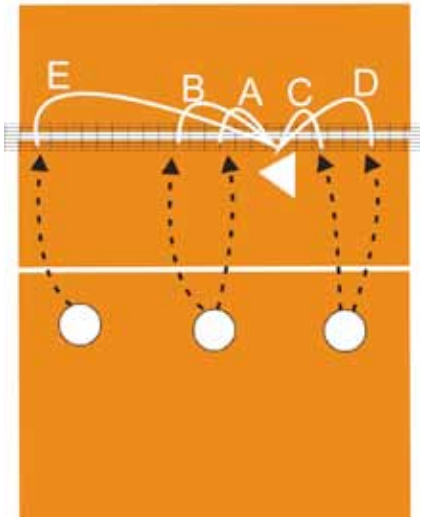
Three Hitting Points (backside)



D 12: Block out/Wipe-off Utilizing Opponents' Blocker

G. Quick Spiking Techniques

Spiking a long, high set over the net will give opposing blockers and receivers time to prepare for the spike. Spiking a short or shoot set is necessary for well-trained teams. There are five basic kind of quick spikes in Volleyball (D 13).



D 13: Basic Types of Quick Spike

1. Quick A: Quick spike just in front of setter. The spiker has to jump and wait in the air for the short set (P13 A).
2. Quick B: Quick spike at a distance of 2 to 3 metres in front of the setter. Spiker has to jump at the same time as the setter hits the ball for set-up (D 13 B).
3. Quick C: Quick spike behind the setter (D 13 C).
4. Quick D: Quick spike at a distance of 2 to 3 metres behind the setter (D 13 D).
5. Quick E: Shoot set spike near the left side of the net poles (D 13 E).

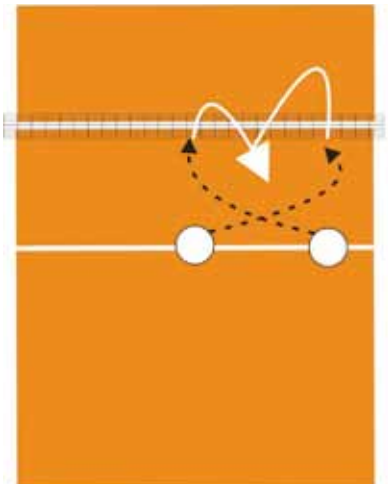
P 41: 'A' Quick Attack

P 42: 'B' Quick Attack

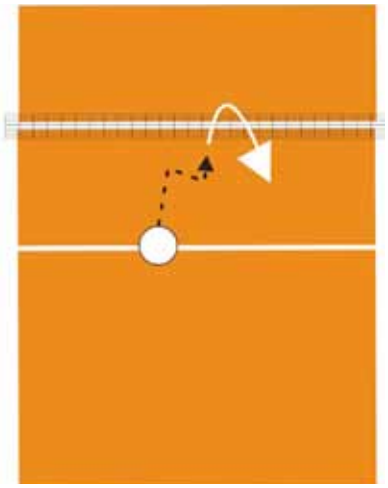
An option depending on the point of the set: if the ball is passed to a point 2.5 m off the net and setter quickly moves under the ball, the spiker should move and jump from 2.5 m away from the setter.

H. Variations and Combinations of Quick Spike Techniques

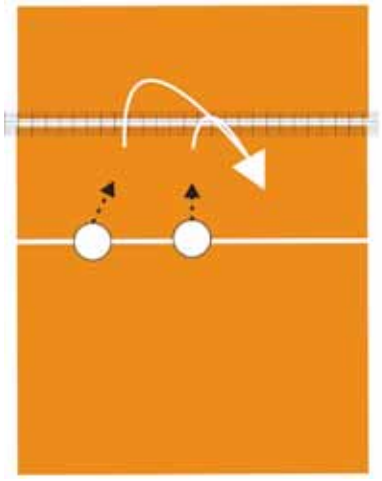
Top class teams use many variations and combinations of quick attack combinations to confuse the opponent's blockers and receivers. These variations are typical.



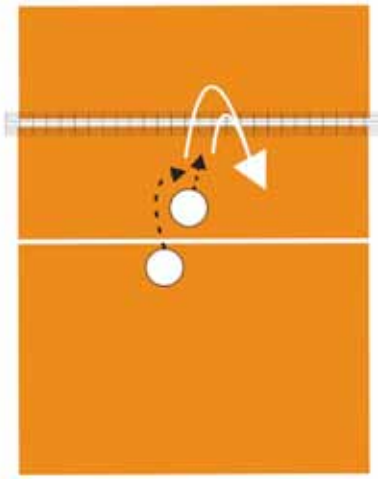
D 14: Quick Spike Changing Positions



D 15: One Player Time Difference



D 16: Double B Quick



D 17: Time Difference in Stack Positions

5. Attack Reception

Spike reception is a technique of underhand or single hand pass patterns. Spike ball speed is increasing each year because of top class players' physical performance improvement. Considering this, the following elements should be introduced in spike reception training.

A. Elements of training for spike reception improvement

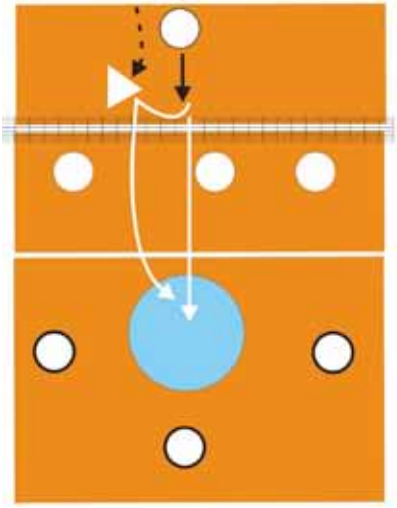
1) Position for spike reception and posture
2) Anticipation or prediction
3) Quick reaction position for ball movement
4) Reflexes
5) Quick movements in the best direction in reception area
6) Dexterity in successive repetitions

P 43: Overhand Reception

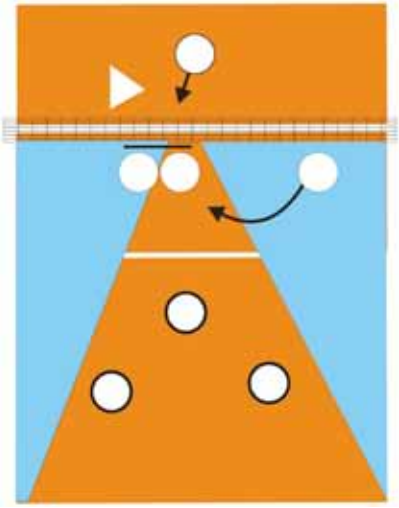
B. Coaching Process of Spike Reception Techniques

△ Starting positions	⇨	Posture for spiked ball	⇨	Abilities to anticipate the timing and direction
				⇩
– Run towards the ball – Run under the ball in crouching footwork – Side-steps – Cross-steps – Dash towards the ball – Backward steps	⇦	Start and stop footwork	⇦	Reactions to the spiked ball in closed distance
	⇨	Overhand reception	⇨	Over cut reception
				⇩
	⇨	Underhand reception in front of body	⇨	Underhand reception at the side of body
				⇩
Flying reception	⇦	Diving reception Rolling reception	⇦	Underhand reception on a diagonal line from the body

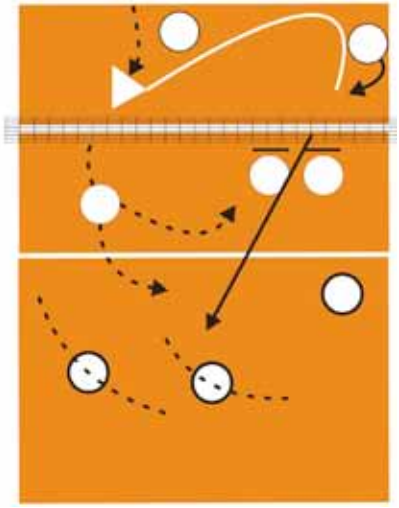
As explained in chapter (2-B), all players should not shift as in Diagram 18. Players in Diagrams 19 and 20 are in adequate positions and direction for spiked balls.



D 18: Poor Position



D 19: Adequate Position



D 20: Directions for Defence

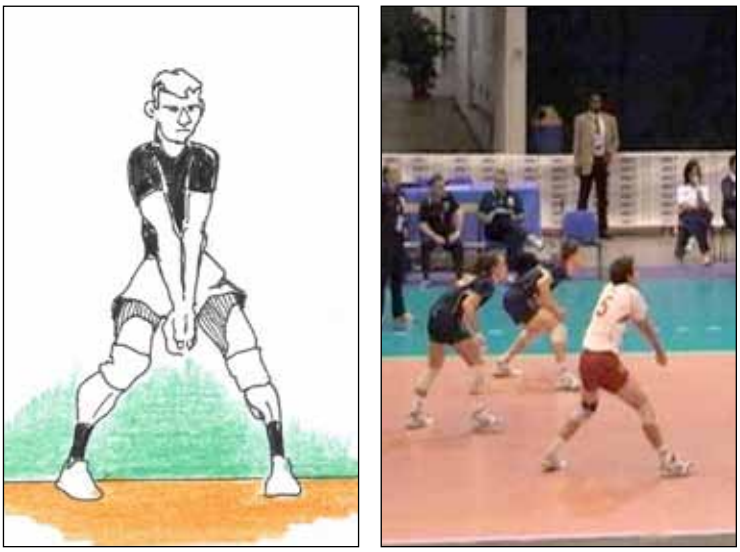
In order to keep their team reception formation, all players in the back court should keep their positions before the start of each movement. In many cases, the players' basic posture will place the reception area between shoulder and knee.

When they receive a spiked ball, they should not hit the ball above shoulder height as it may be outside the court. Receivers should keep low postures and always beware of spiked balls coming mainly below the shoulders.

C. Posture for Spiked Balls

As mentioned in the articles on underhand passes and fundamental postures, all players in the back court should keep stances as illustrated for quick reactions to fast spiked balls. Pay attention to arm and foot position (P 44).

P 44: Basic Posture



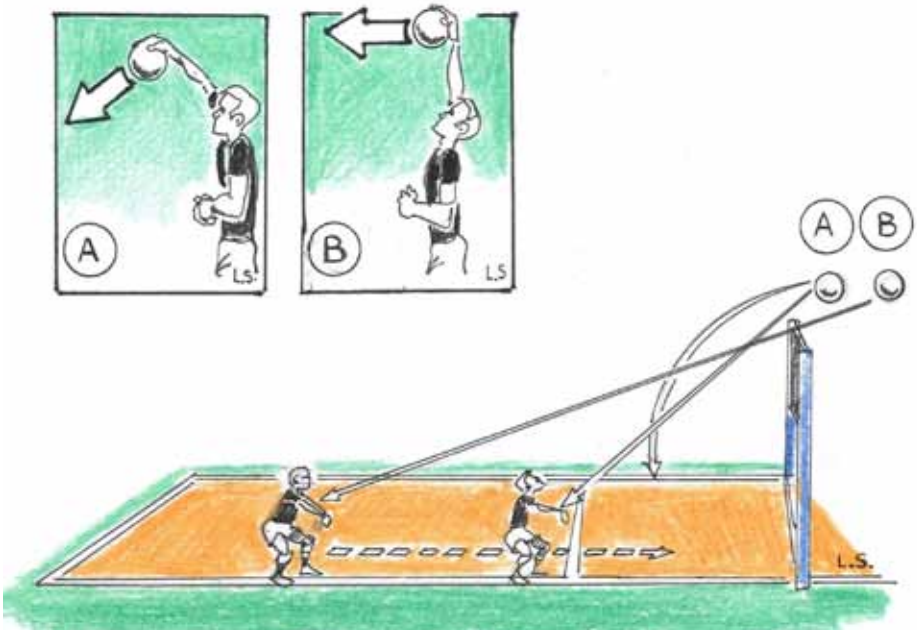
P 45: Bad Posture

D. How to Anticipate the Direction of the Spiked Ball

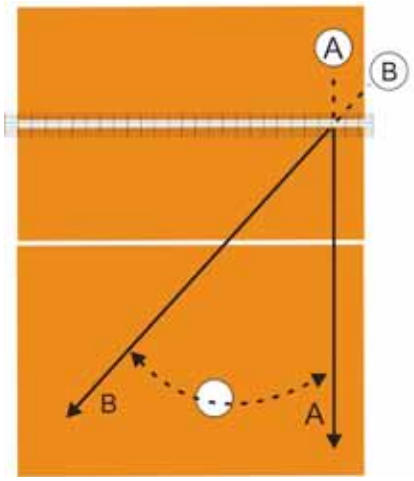
1) Anticipation to Back and Forth
Distance from the net to set up: If the setter sets the ball far from the net, the spiker cannot make a hard, short spike in the attack area most of the time (P 46).

Hitting position of spikers: If the spiker is not tall and if he is not good at jumping, or if he hits the ball above or behind his shoulder, he will not be able to hit a hard, short spike into the attack area.

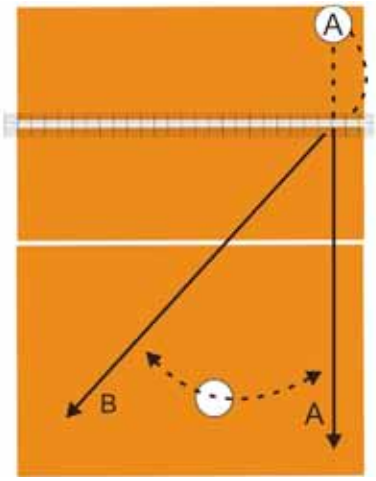
2) Spikers' Approach (in direction or steps)
The receiver can anticipate direction of the spike by observing spikers' direction or last two steps (D 21 – 25).



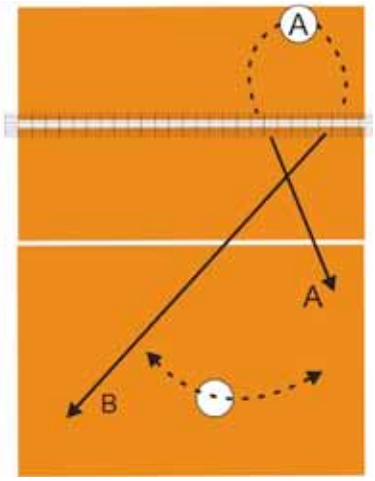
P 46: Anticipation of Spike Angle



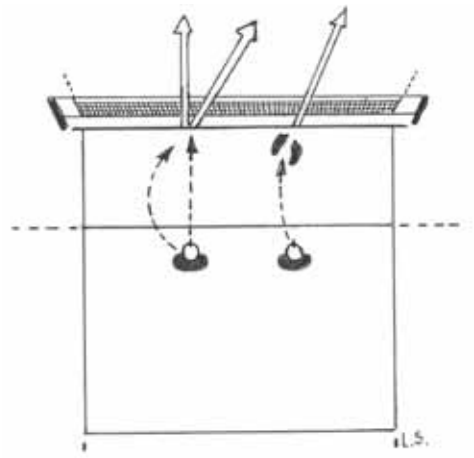
D 21



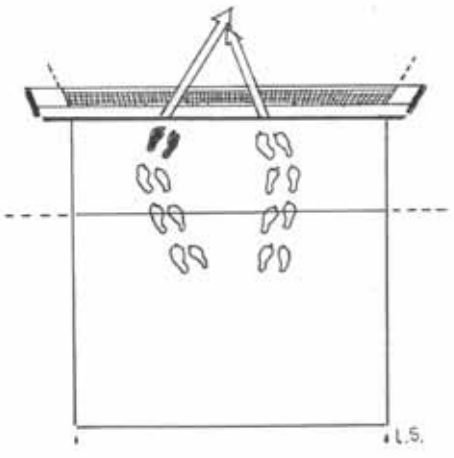
D 22



D 23



D 24



D 25

3) Changes of Hitting Points
Attention must be paid to the arm swing of spikers: All spikers have their own special tendencies. The team coach must point out and explain the opponents' habits to his receivers for future prediction of moves.

Position of blockers' hands: All receivers decide their plan of action based on the position of blocker's hands. They have to move between or outside blocker's hands.

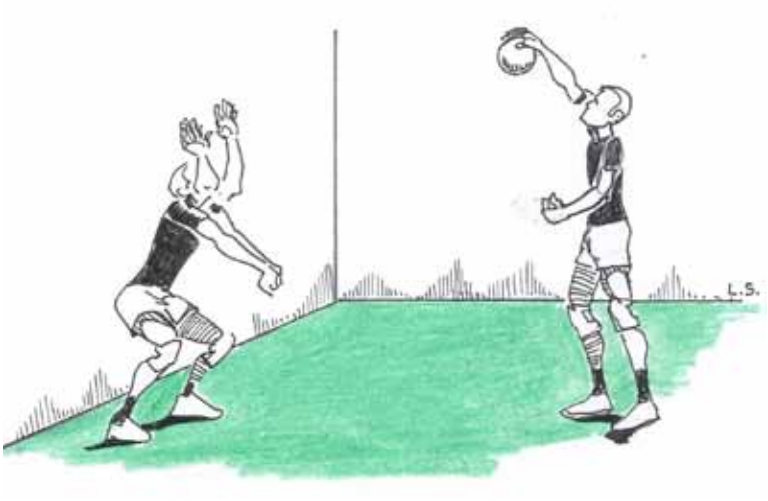
Each team has its particular team formations for attack. The team coach should observe the opponents' favourite attack formation so players can plan their formations to prevent opponents' spike success.

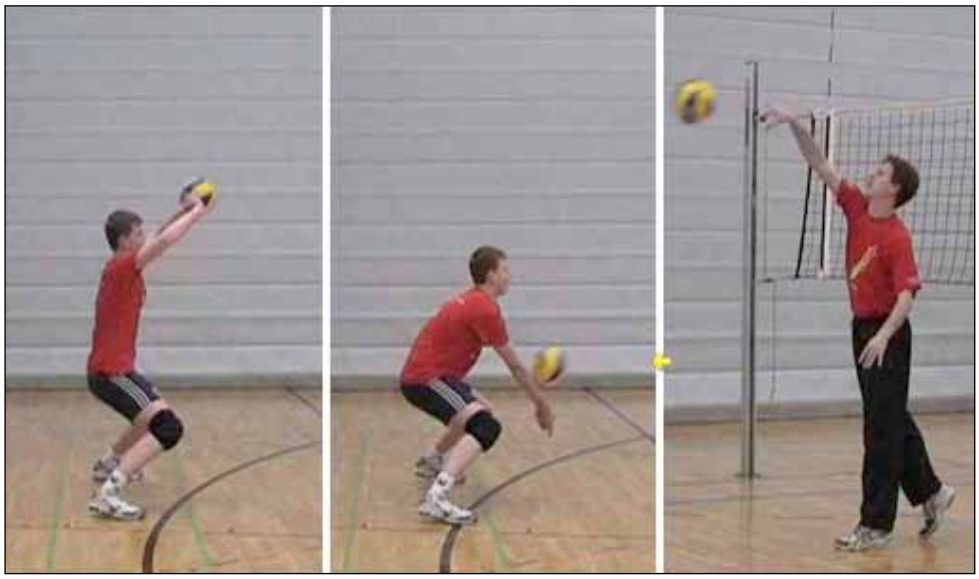
E. Importance of Reaction in Spike Reception

Spiked ball speed is increasing especially in top class Volleyball. The results of the Japan Volleyball Association's scientific research on speed of the powerful spiked ball are as follows:

Speed of spiked ball by top class players:

- Men – approximately 27 m/sec (60.6 mph)
- Women – approximately 18 m/sec (40.3 mph)





P 47: Match Reception

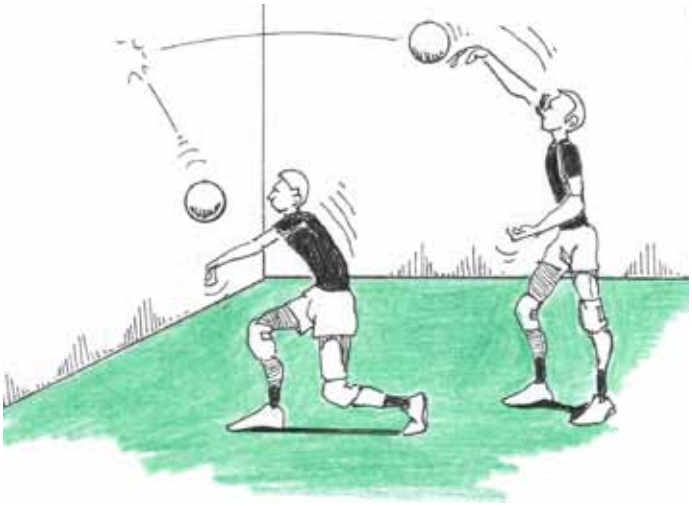
P 48: Wall Reception

On the other hand, men's and women's reaction time, measured by sight, on single reaction methods were as follows:

– Average men and women: approximately .40 seconds
– International Olympic 100 runners (men): .25 seconds

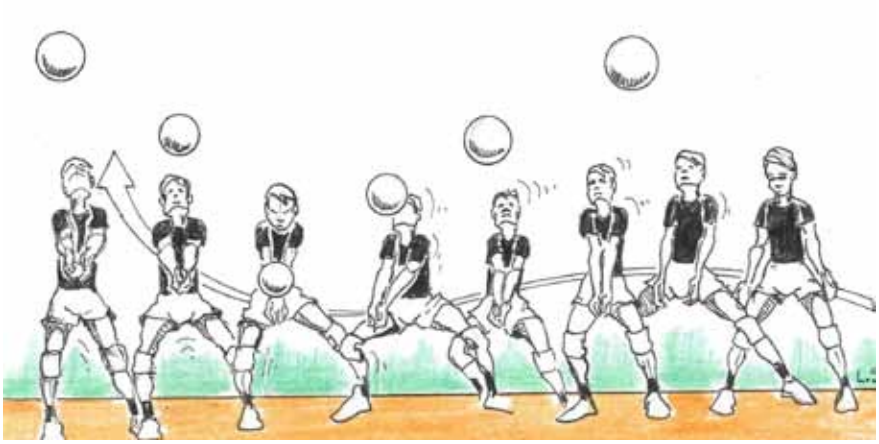
If the ball flies 9 metres in the air from the top of the net to the floor at the same speed mentioned above, reaction time is .333 seconds for men and .50 for women. But in actual game situations, spikers hit closer to the net and balls fly closer to the floor.

This data means that spiking must be performed at the limit of human ability and reaction time training to spiked balls is vital. A tip ball stays in the air approximately 1.20 seconds from the top of the net to the floor. A player can move 3.5 m within 1.20 seconds. Players must start 3 to 4 metres from the net (near the attack line) to receive a tip ball. This is why anticipation and reaction time are very important in reception play.

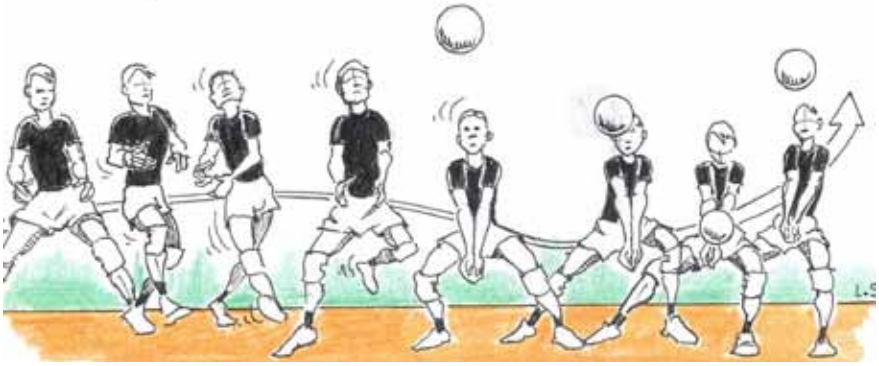


P 49: Sliding Play Moving Forward

P 50: Diving



P 51: Side Step Foot work



P 52: Cross Step Foot Work

P 53: Reception Outside Body

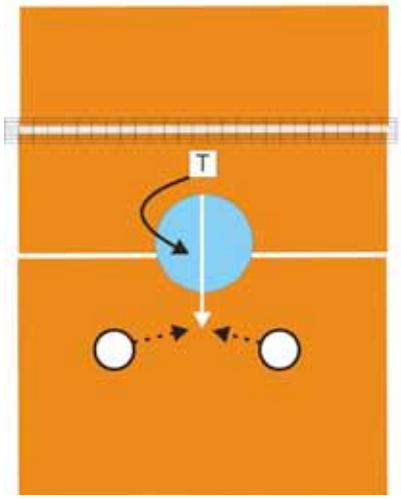
P 54: Arm Motion and Body for Side Reception

P 55: Rolling Reception

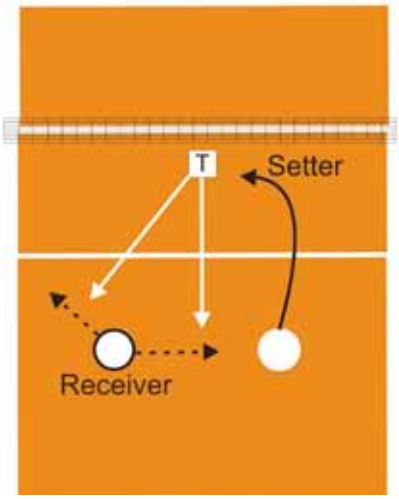
F. Direction of Reception Movements by One, Two and Three Players

As mentioned in underhand pass techniques, players should not move to the side but rather in a 30 to 45 degree diagonal direction when they return the ball to the setter as illustrated in the following diagram (D 26 - D 29).

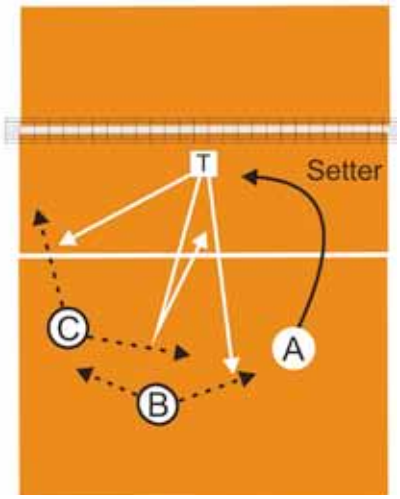
When players receive a spiked ball by two players, anticipation of the next spike is essential for good formation play. Without anticipation, the reception will fail when the spiker tries a tip ball between the two players. The reception formations in the 6-player system is always anticipated by the players. At the same time, players should move in a 45 degree diagonal from each other and cross and cover each other as shown in the diagrams (D 26 – D 29).



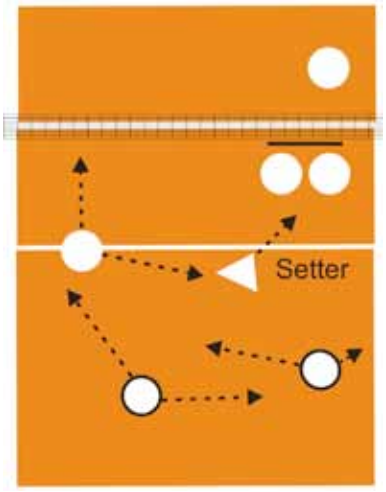
D 26: Weak Point Among Two Players



D 27: Decision Based Upon Position of Players



D 28: Collect Movement by Three Players



D 29: Team Defence Formation

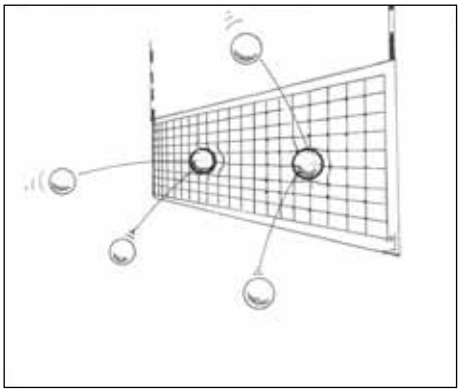
When three players receive a spiked ball, in diagram D 28, player A moves for the tip ball reception or next set up, B moves behind C for coverage moving in a diagonal direction. This principle should be applied to all team reception formations even in the service reception formations.

When players master the fundamental spike reception techniques, the coach introduces variations on applied techniques (such as reception for unexpected ball rebounds) to cover adapting to all cases.

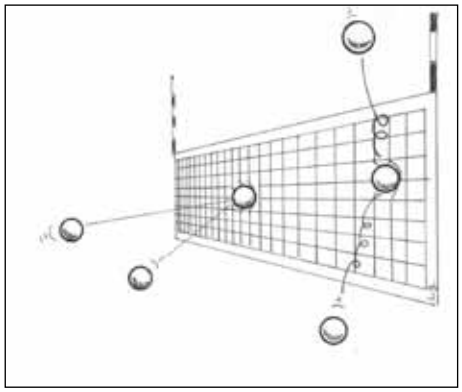
G. Net Play (Recovery From the Net)

There are differences in the type of rebound as shown in the diagrams D 30, D 31. The coach introduces net recovery training for game situations. Three factors which affect the ball coming off the net are as follows:

1) The speed of the ball as it travels into the net
2) The part of the net it goes into
3) The angle of the ball's deflection off the net and the direction of the ball's spin



D 30: Position of Rebound at Net with Speed



D 31: Deflexion Angle by Ball

6. Service Reception

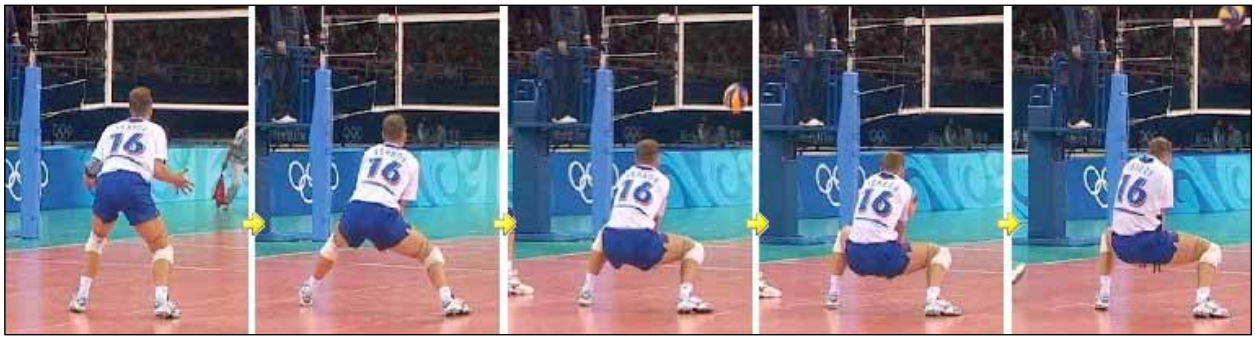
Service reception is principally the applied technique of the underhand pass. If a team misses the serve, the opposing team immediately scores one point as a result. It is essential to master the correct technique in service reception in developing a good team.

A. Coaching Process of Service Reception

△ Underhand long pass	⇨ Underhand long pass moving forward	⇨ Underhand long pass in crouching posture
		⇩
Service reception in crouching posture	⇦ Service reception moving forward	⇦ Underhand long pass 45° diagonal directions(left, right) using side-step
⇩		
Service reception moving 45° diagonal directions (left, right)	⇨ Position and Confirmation of movement direction	⇨ Service reception returning ball to a setter
		⇩
Service reception by three players with penetrating setter	⇦ ⇦	⇦ Service reception by two receivers
⇩		
Service reception formation (W, M, roof and dish)		

P 56: Basic Posture in Receiving Low Serve

P 57: Contact with a Ball in a Low Position



P 58: Basic Serve Receive Posture

P 59: Serve Receive Moving with Side Step

P 60: Serve Receive in Low Position

P 61: Service Reception Outside Body

B. Technical Principles in Service Reception

The first service reception step is to move towards the ball and receive it directly in front of the body. The fundamental medium height position is as in P 58.

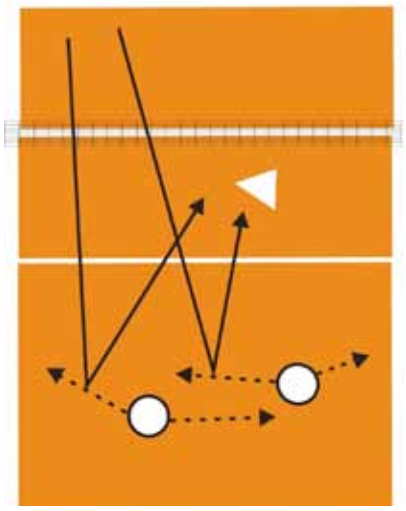
The ball should not be received above waist height but if the player has no time to move laterally and to receive the ball directly in front, the reception can be done by moving the arms laterally as shown in P 61.

The ball should be received between the knees in a low position and returned towards the setter.

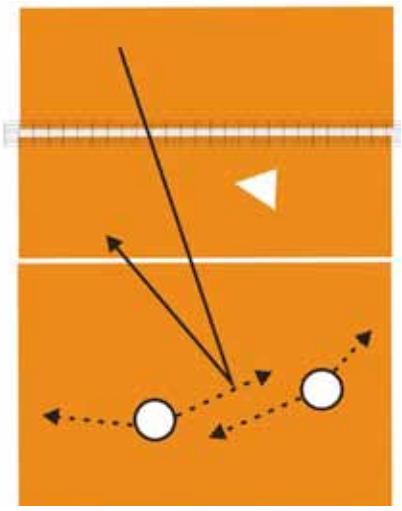
The direction of the served ball changes suddenly close to the top of the net and at shoulder height of front-line players. Also, when a player receives a change-up service, he should not receive the ball stretching his body upward. Watch the ball carefully and face setter's direction before service reception.

C. Directions of Movement in Service Reception

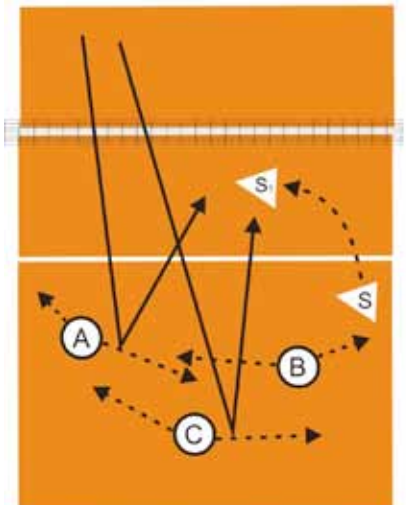
These directions are important for service reception when the player wants to return the received ball to the setter (D 34, D 35). When players move to the side, only use side step, not cross step.



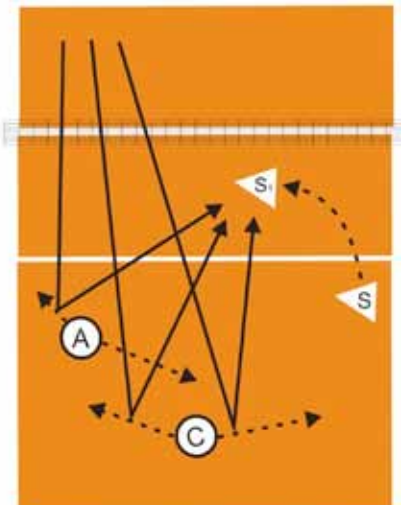
D 32: Correct Direction



D 33: Bad Direction



D 34: Service Reception by Three Players



D 35: Service Reception by Two Players

P 62: Service Receive Formation

7. Blocking

Blocking is a most effective counter attack in modern Volleyball; it is not a defensive technique. The coach should give attention to improving fundamental techniques of blocking for success in the actual game. Even in blocking, there are many basic elements which players should master throughout the daily training.

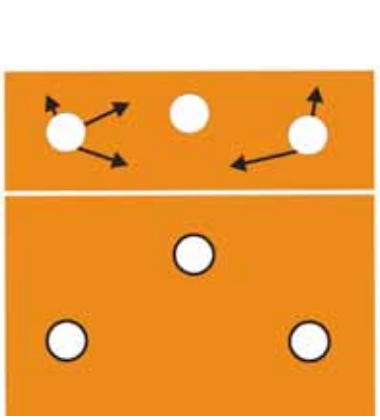
A. Coaching Process of Blocking

△ Starting position	⇨ ⇨	Take-off and form in the air in blocking
		⇩
Approach and jump with one step side	⇦ ⇦	Approach and jump in the same position
⇩		
Approach and jump Moving back and forth	⇨ ⇨	Approach and jump moving 45° diagonal direction
		⇩
One man block to actual spike	⇦ ⇦	Approach and jump moving parallel to the net in side-step, cross-step and dash
⇩		
Prediction of spike course and timing	⇨ ⇨	Prevention of wipe-off technique
		⇩
Two man block and its axis for perfect blocking	⇦ ⇦	Recovery and move to the position for next play

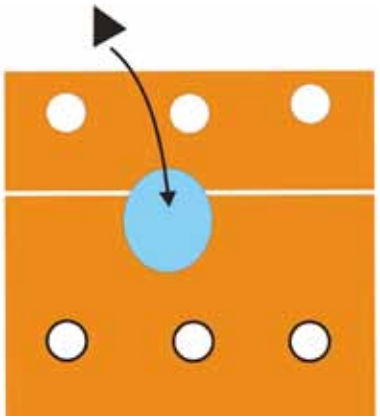
B. Starting Position of Blockers for Opponent's Attack

Front centre player (FC) stays near the net, front left (FL) and front right (FR) stay behind the net, then FL moves for block against quick spike (D 36).

When all blockers stay near the net, there are no receivers for tip-ball and quick spike (wrong position) (D 37).



D 36: Correct Basic Positions



D 37: Wrong Positions

C. Fundamental Postures for Blocker

Hands behind ears; 90 degree angle at hips and legs; 100 to 110 degree angle at knees; 80 to 90 degree angle at ankles (P 63).

D. Height and necessary Conditions for Blocking

Jump as high as possible and extend hands over the net at the following heights (P 64):

- Men - Elbow over the net
- Women - Middle of arm between elbows and wrists over the net

Proper timing is a very important element in perfect blocking. If timing is poor, the ball will deflect away after the block. In badly timed jumps or bad posture, the ball will fall between the net and the body. Receiver in back court may not anticipate the path of the spiked ball and will be unable to receive the ball properly. Timing for the blocker will depend upon the jumping ability of the spiker, the force of the spiked ball and the distance of the set from the net.

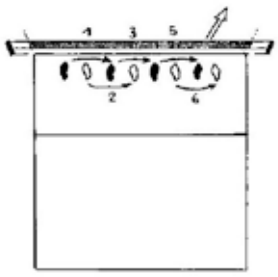
P 63: Angle Before Block

P 64: Blocking Form

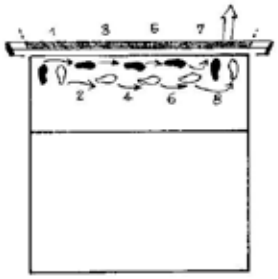
P 65: Movement After Blocking

E. Movements and Footwork in Blocking

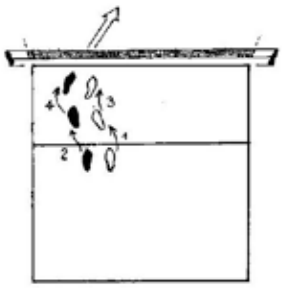
a) Side-step near the net and braking foot position (D 38)
b) Cross-step near the net – faster than side-stepping (D 39)
c) Dash facing side and braking position – No. 7 step: Braking foot position (D 39)
d) 45 degree diagonal movement for prevention of wipe-off techniques (D 40) – No. 3, 4 step: Braking position for prevention of wipe-off spike.



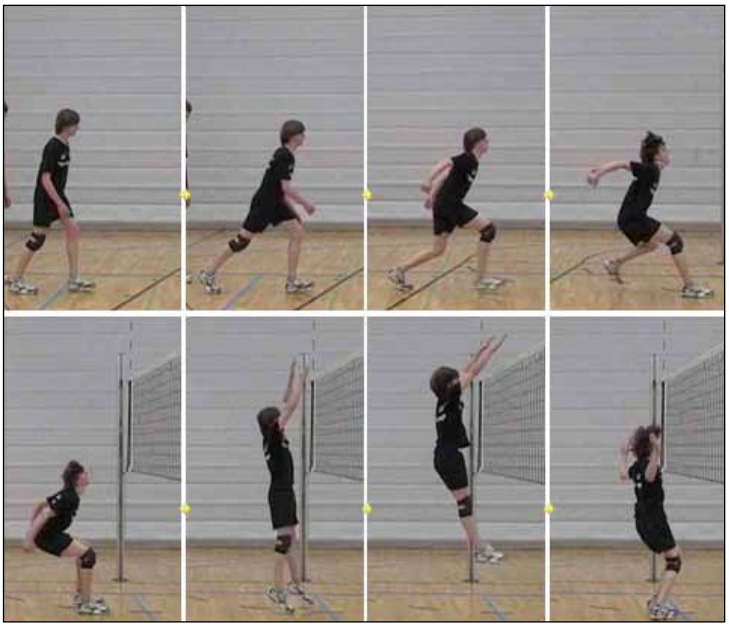
D 38: Cross step Block



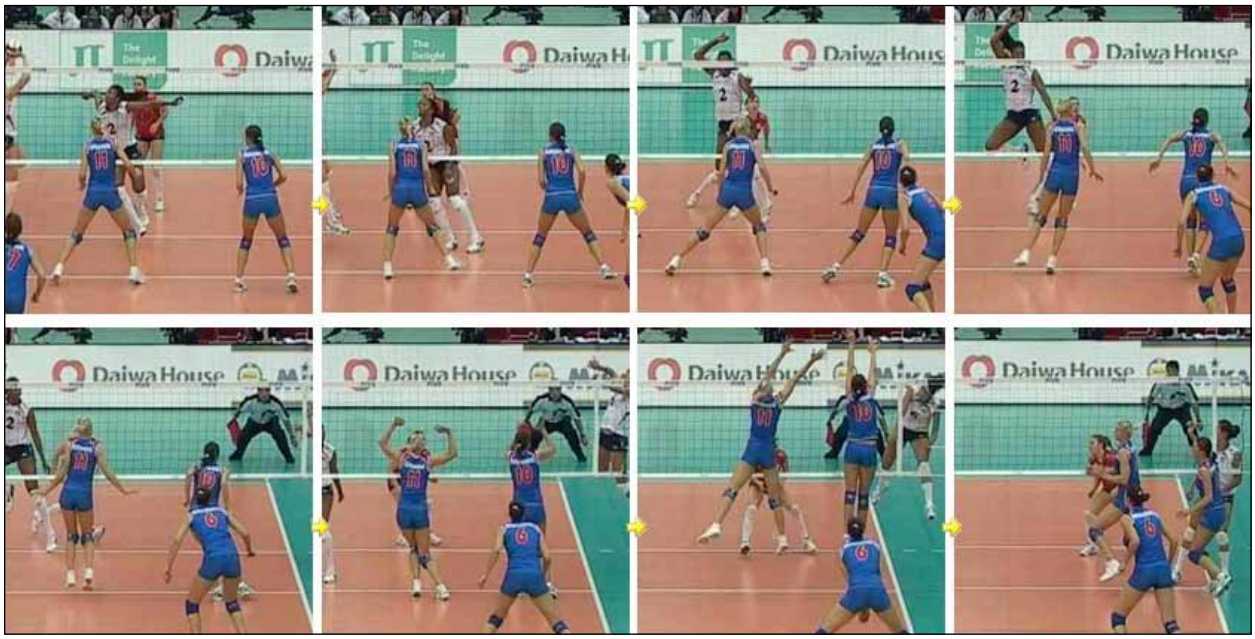
D 39: Running Block



D 40: Moving Forward

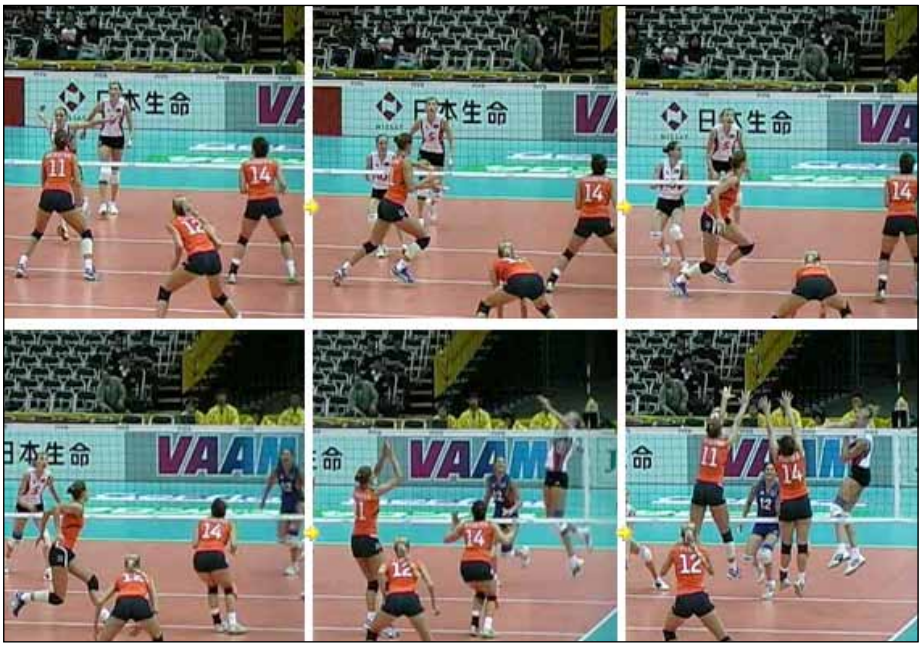


P 66: Blocking with Forward Movement



P 67: Blocking with Shuffle or Side Steps

P 68: Blocking with Cross Step



P 69: Blocking with Turn and Run

F. Arm Motion in Blocking

In the final approach, the blocker should face the inside of the court to prevent wipe-off spike.

P 70: Effective Block

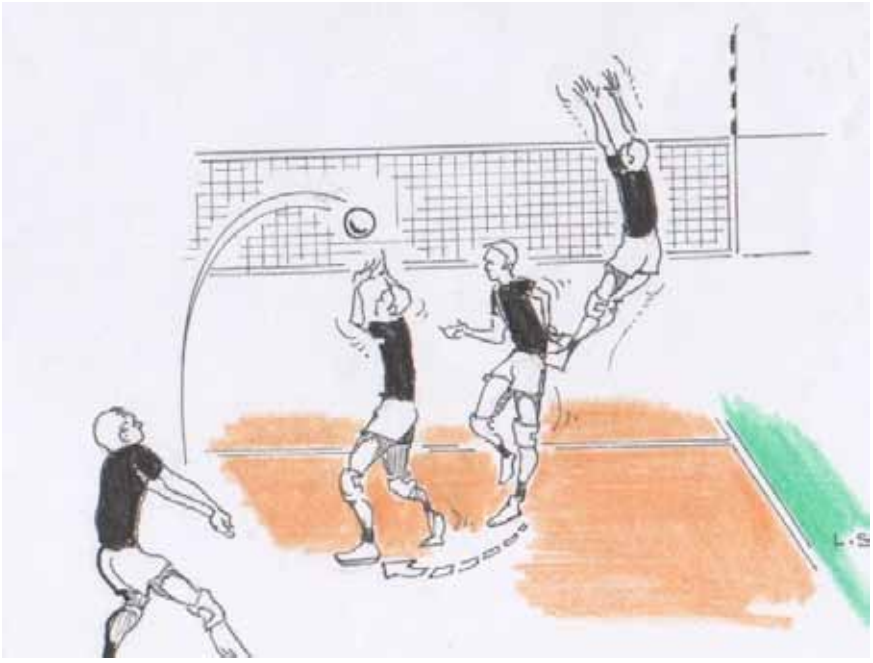
After the opponent's set-up, the blocker should watch the approach of the spiker and anticipate the direction of his spike.

Learn the technique of increasing the width of the blocked area by moving the hands along the net after anticipating the path of the spiked ball.

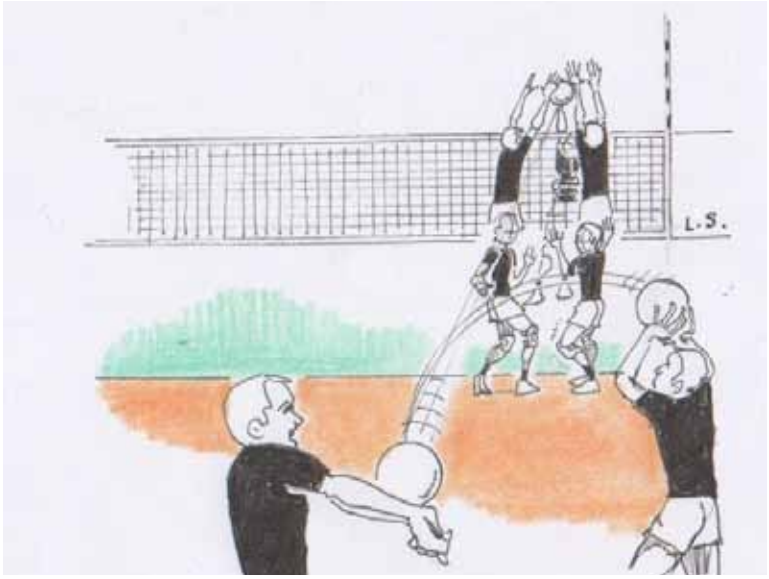
In final spiked ball contact, extend thumbs and little fingers. Wrist action should be added in returning the ball to the opponent's court.

G. Movement After Blocking

When the block succeeds, look out for the next blocking attack.



P 71: Movement After the Block



P 72: Movement After Blocking

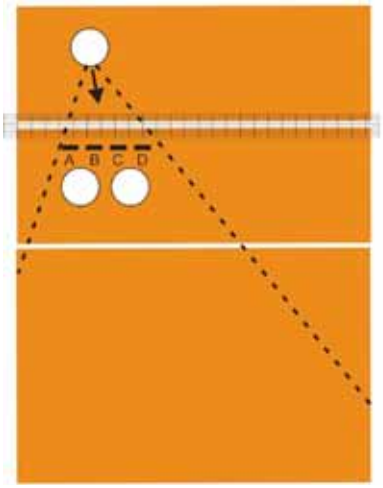
When the block fails, land on the court facing the spiked ball for the next play as shown in the diagram below. When the ball passes between two blockers, they should face the spiked ball. Confirming the position of the setter, they should move to correct positions for the next spike. Sometimes after blocking, they will have to move for net recovery and set up (P 71).

H. Principle and Method of Blocking with More than Two Players

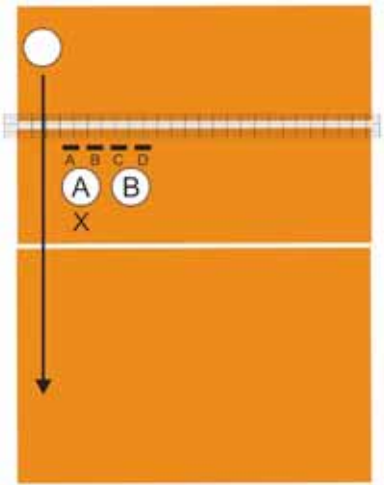
The blocker, staying close to the spiker, should be the axis of blocking.

Hand B of outside blocker should be the axis (centre) of two-man blocking (D 41).

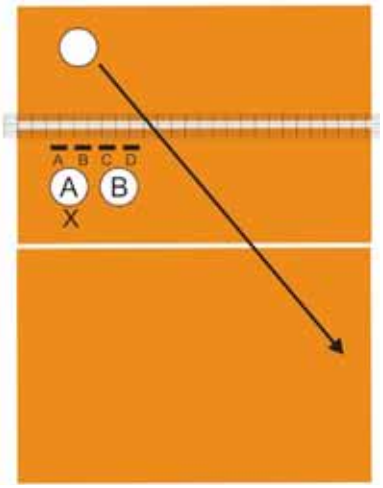
Prediction of spike direction by player A was wrong (D 42, D 43) and of player B (D 44).



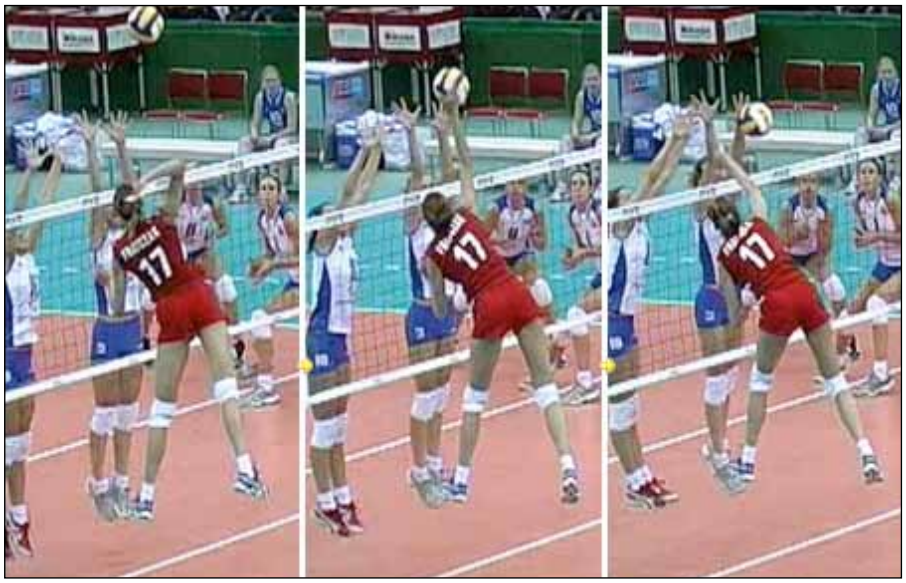
D 41: Correct Position



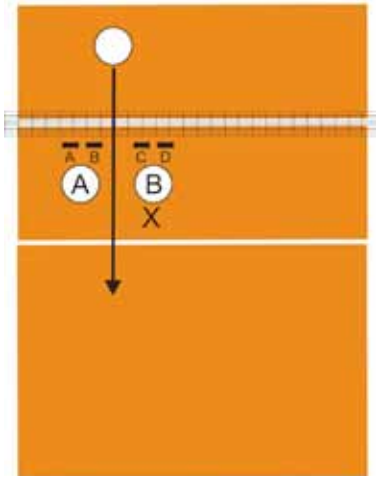
D 42: Wrong Position (outside)



D 43: Wrong Position (inside)



P 73: Cut Spike Inside



D 44: Spike Between Two Blockers

P 74: Perfect Blocking

When the ball passed between players A and B, player B should be responsible (wrong) (D 44).

I. Judgment of whether or not to jump for the blocker

Judgment will depend on the following conditions of the opposing team:

a) Distance of the set from the net
b) Whether or not the spiker's approach is well-timed
c) Ability of the spiker (can he hit spike hard or not)

Chapter VII

Practice and Drills Design

by Mr. Bill Neville, Coach, USA Volleyball

Introduction

The standing clichés in sports focus on the theme that the success of any team in a contest is built in the practice gym. So obvious. So true. Most coaches feel they do not have enough practice time, space, or adequate facilities. There is a danger in investing too much time on things one cannot control. (Limited space, limited time slots, league or association restrictions or length of practice seasons, paltry budgets etc.)

Coaches, as well as players, must focus on what they can control. A coach, of course, must continue pursuing improvement in his training conditions. But concern over what is wrong with a situation should never permeate the positive elements of what a coach is trying to create.

The word "practice" can cover every element of a team's development. It is not just an organisation of drills. It is an on-going opportunity to develop attitude, behaviour patterns, cooperation, commitment, discipline, physical condition, techniques and tactics. These elements are intertwined. Blended together, these ingredients make up the final product that is commonly called a "team".

The following offering will look at these elements of the athletic recipe known as "practice".

Attitude

The team attitude begins with the coach. A great advantage for any coach is to be able to look into a mirror and see the same person others see. We are biased about ourselves. Either we are too self-critical or not critical enough. Adolph Rupp, the late "Baron" of Kentucky basketball, once said, "We're never as good as we think we are nor as bad as we think we are".

The coach initiates how a team is going to feel about itself, how it is going to believe in itself, how it will view situations. If the coach blames the officials, a low budget, or pitiful facilities, then the team will follow suit. If the coach is enthusiastic, believes in himself, sees an opportunity for growth even in the most dire situation, then so will the team.

Look in the mirror. Do you see the person others see? Because the coach is the person who will have the most significant influence – positive or negative – over the team, good practices, good matches, and a good programme will depend upon the daily attitude exhibited by the coach.

A COACH IS HIS OWN BEST TOOL IN DEALING WITH HIS TEAM. HE SHOULD THOROUGHLY KNOW THAT TOOL AND ITS BEST USES.

Behaviour Patterns

Practice is the forum for developing the behaviour patterns the coach wants his team to follow. All functions of practice should have a design. The disciplines and routines of practice should be consistent. If specific behaviour patterns are implanted in practice they will carry over to travelling habits and, of course, match behaviour. The coach's behaviour is the vanguard of team behaviour.

The coaching staff should:

- Always start practice on time – every time. (this means the coach should be at practice early to ensure everything is ready).
- Always be dressed in clean, neat coaching apparel.
- Always be well groomed.
- Always have practice outlined in a journal or notebook.

The players should:

- Always be ready to start practice on time – every time.
- Set up the practice gym.
- Always fold up personal equipment (sweats, towels, etc.) and neatly store them in a designated area.
- Prepare mentally for each practice, focusing on areas they need to concentrate on.
- Be in neat, clean practice gear representing the organisation for which they play.

The practice area should be neat, clean and organised. It should represent the attitudes and positive behaviour of a team by its preparedness. It is the place the players become the team. It should reflect the team personality and the behaviour that makes up that personality.

The behaviour patterns – the life style - of the team is molded in the practice gym. On a daily basis the routines of the preparation as well as actual training activities must be consistent in terms of expectations.

BE CONSISTANT, DEMAND BEHAVIOUR FROM YOURSELF AND THE PLAYERS THAT REFLECTS A WINNING ATTITUDE AND PRIDE IN EVERYTHING THE TEAM DOES.

The "cumulative effect" should be the foundation for any coaching philosophy. How a coach treats any individual situation does not stand alone as witness to his total make up. One bad practice does not cast a permanent pall over a team. No one knows the exact time when he becomes a good player. We get to where we are going by stringing together a long series of experiences. This is especially obvious in goal-oriented activities found in competitive sports.

There is a natural "cumulative effect". The team and what it represents is an accumulation of its experiences. As coaches, we want a series of experiences to be productive and positive so the result is a quality programme.

Everything that is done contributes to the cumulative effect. It can be positive or negative. If a coach is shoddy, inconsistent, and undisciplined, the accumulation of negative experiences will be reflected in the team's lack of pride, poor self-image and lack-lustre performance. On the other hand, if a coach requires high standards, then the accumulation of good experiences will be reflected in the team.

The cumulative effect is easily seen in practice. A team should never waste a day, an hour or a minute. If a team maximizes every opportunity to improve, the result will be first class. Wasted time, low expectations and inconsistency will have the opposite effect.

DEVELOP AND PUT INTO EFFECT ON A DAILY BASIS, A PLAN WHICH REINFORCES DESIRABLE BEHAVIOUR ALL THE TIME.

Physical Conditions

It is a well known fact that a human being who is in great physical condition performs all human functions better. However, a coach needs to be aware of the physical conditioning principles relative to Volleyball.

Dr. Carl McGown, a world-known authority on Volleyball, has done research on the components of teaching physical skills relative to sport. Many of his findings have been controversial and have affected traditional thinking about training.

Dr. Carl McGown notes:

- A participant must be well conditioned to obtain the benefits of a warm up.
- Warm up and physical conditioning should be specific to the activity to be performed.
- Warm up should last at least ten minutes (muscle temperature will stabilize) but no longer than 15 minutes (glycogen stores will begin to deplete).

If specific physical conditioning takes place before technical skills practice begins or the warm up is so intense or long, the quality of skill development will be limited.

Without question, the Volleyball athlete must be highly physically conditioned, prepared for explosive, anaerobic function, as well as for the prolonged jumping of a three-hour match. Physical conditioning should be planned and specific to the demands put on the body to perform Volleyball skills.

There will be residual benefits from a physically difficult skills practice. The coach must be careful to balance focus on skills development, yet physically train the athlete without obliterating his ability to effectively perform.

BE SPECIFIC IN PHYSICAL CONDITIONING, DO NOT CONFUSE WARM UP WITH PHYSICAL CONDITIONING. DO NOT CONFUSE PHYSICAL CONDITIONING WITH SKILLS DEVELOPMENT.

McGown's analysis emphasizes the critical importance of being very specific in every aspect of athletic training. There is virtually no transfer of skills or training effect from one activity to another. Hence, if someone trains for marathon swimming, he cannot emerge from the water and run a marathon without feeling serious pain. Even though the cardiovascular system is in great shape, the muscle usage and body rhythm are completely different.

We must repeatedly train the muscles in the same movements (motor programmes) and velocities required in the skill activity.

This concept of specificity shatters many schools of thought in lead up games, transfer of skills from one activity to another, and drills not game related. Part-whole methods of teaching progressions are not efficient.

RESEARCH HAS SHOWN THAT THE MOST EFFICIENT WAY TO TRAIN A SKILL IS TO PRACTICE IT AS SPECIFICALLY AS POSSIBLE IN THE EXACT ACTIVITY IN WHICH IT WILL BE USED.

Definitions

Movements: The body mechanics required to execute a physical skill.

Skill: A series of gross movements, postures and series of related finer movements to effectively perform a required physical task.

Repetitions: One successful execution of a skill.

Set: A series of required number of repetitions.

Drill: A measured series of sets closely monitored by a coach and designed to blend individual skills into an orchestration of team skills to gain a desired unified effect.

Practice: A block of time scheduled to include a series of drills organised in a logical progression based on predetermined performance goals.

Season: A calendared block of time scheduled to include competitions and practices designed for mutual influence.

Ingredients For a Good Practice

In order for a drill and a practice to be effective and efficient, certain elements are required:

Coach's Skills

1. A sound knowledge of the movements and skills.
2. A developed list of principles for teaching techniques.
3. A sound knowledge of the tactical applications of technical skills.
4. A sound knowledge of physical conditioning and training principles.
5. Creativity.
6. Organisational skills.
7. Communication skills.

Facilities & Equipment

8. Minimum 2 balls for every player.
9. One net and court per 6 players.
10. No more than 30 feet beyond side lines or end lines and no less than 20 feet to walls.
11. FIVB approved standards.
12. Nets must have unbreakable poles.
13. A basket or cart on wheels to contain at least 24 balls.
14. Ability to set up area, centre court.
15. Ceiling of 25 to 40 feet in height.
16. Good lighting.
17. Minimum of stored equipment, sharp wall attachments, etc.
18. Good training equipment (jumping, physical, technical).

Players & Staff Responsibilities

19. Players taught to practice (rules, communication, specific practice skills).
20. All warm up and other players' articles neatly stored.
21. Practice uniforms.
22. Coaches in coaching uniforms.

NEVER TEACH TACTICALLY WHAT YOUR PLAYERS CANNOT EXECUTE TECHNICALLY

Each practice should have a theme (i.e. offensive, defensive, fundamentals, game plan review, "heart" development, etc.)

Each practice should have a tempo (i.e. intense game speed, slow learning, etc.)

Each practice should contain a logical progression (i.e. individual skills and movement to application at competition (tactical) level).

Drills are designed accordingly.

Drill Design

1. Teaching
   Slow. Not necessarily game related. Mechanics related. Closely scrutinized. Specification of movement pattern required.

2. Rapid Fire
   Fast tempo, many contacts in short time. Closely supervised – time measurement.

3. Frenzy or Crisis
   Very fast tempo. Focus on intestinal fortitude combined with skills under stressful conditions. X number of repetitions in total or in a row terminates drill.

4. Flow of Play
   All team drills and some singles to triads. Blending of two or more skills. Fast – moderate – slow tempo. Close scrutiny. Successful repetitions in a row. A total successful repetitions.

Drill Measurement

- Timed
- Successful reps goal
- Successful reps in a row
- Timed block with required successful reps
- Successful reps goal with certain number in a row
- Successful reps goal with minuses for unforced errors
- Athlete termination

Drill Questionnaire

1. Is it efficient?
   Number of ball contacts to allotted time segment.
   Organisational flow.

2. Does it demand quality of performance?
   How is it measured?
   Are production goals challenging?

3. Does it keep everyone involved?
   What are the roles of the players?

4. Is it game related?

5. What is the work-rest ratio?

6. Is it interesting?

7. Is it measurable?

Other Drill Considerations

Each drill should have a nickname so explanation should be kept to a minimum.

There Are Residual Benefits to Practice

- Team building (cohesiveness, common spirit or mental power, discipline)
- Cumulative effect
- Increased physical condition
- "Team personality"

General Phases of Practice

1. **Warm up**
   Raise body temperature Range of motion
   Cardiovascular (jumping)
   Technical

2. **Foundation work**
   Individual fundamentals progression

3. **Combination work**
   Drills using individual fundamentals with 2 or more players

4. **Team work**
   Full team drills applying techniques and skills used in phases 2 and 3

5. **Stress work**
   Crisis or frenzy drills for individuals or total team

6. **Physical conditioning**
   Jump training

7. **Cool down**


COACH

Chapter VIII

Basic Team Compositions and Formations

by Mr. Jivo Jetchev, Member of Technical Commission

One of the major incentives for children to participate in systematic Volleyball activities is the strong desire for competition (taking part in competitions). Thus, in the early stages of Volleyball preparation, the lead-up games and the games on a small court are a significant part of the training process. The development of basic technical skills of the beginners should be combined with preparation for competitive play.

The formation of the starting line-up and the correct positioning of the players on the court are fundamental problems that the coach faces. That is why, in the preparation of young players for competitions along with conditioning and individual technical skills, basic tactics should be worked on, too.

When considering team tactics, one should take into account the fact that no team can play more complicated tactics than those that are allowed by the individual technical level of the players; there is a close relationship between the players' individual technical skills and team tactics.

Team formations

Team formations in Volleyball are assigned by two numbers. The first one stands for the number of spikers, and the second – the number of setters. For example, 6-6 formation means that all players partake as spikers and setters, according to their position on court.

In the earliest phases of development of young players, this is the most suitable formation, because it is the most elementary one.

In parallel with the technical and physical refinement of the young players, a process of specialization occurs. Some of them prove themselves to be more successful as attackers, others show better command of the overhead pass. Once the two main groups of beginners are differentiated, the implication of group formation 3-3 becomes possible. In this formation, there are three spikers and three setters on the court, arranged in triangles, as seen in Fig. 1.

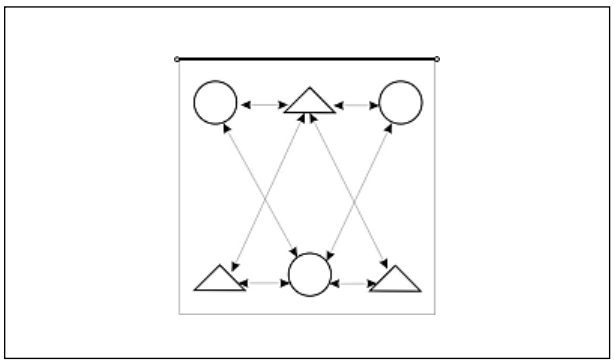


Fig. 1

The position of the setter is in the middle zone, #3. The 3-3 formation requires faster penetration of the setter to that zone after service. In cases, when the front-row players are two setters and one spiker, there are two possible variations. (See Fig. 2.1, Fig 2.2)

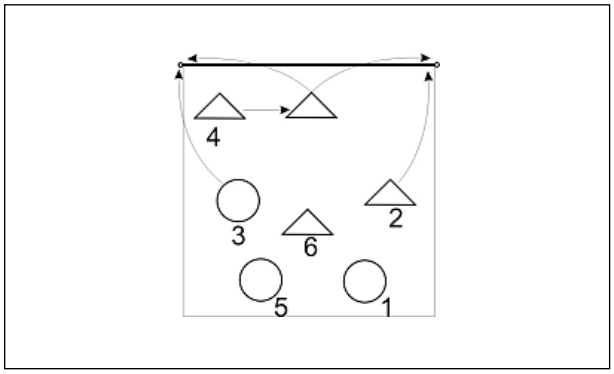


Fig. 2.1

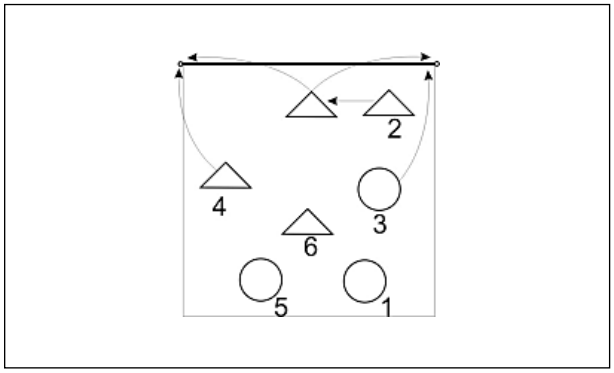


Fig. 2.2

The specialization of players, based on functions, begins with the implication of the 3-3 formation. The actions of attackers and setters are not complicated and this composition does not require long-distance set-ups.
The 3-3 formation is not balanced very well in the aspect of attack. In three of the positions, there are two spikers and one setter in the front row, and in the other three there are two setters and just one spiker, which means that the team lacks attacking strength.
With the development of the young players, and based on their consequent specialization, the 4-2 formation is applied. The positioning of the players in this formation is arranged in diagonals. (See Fig. 3)

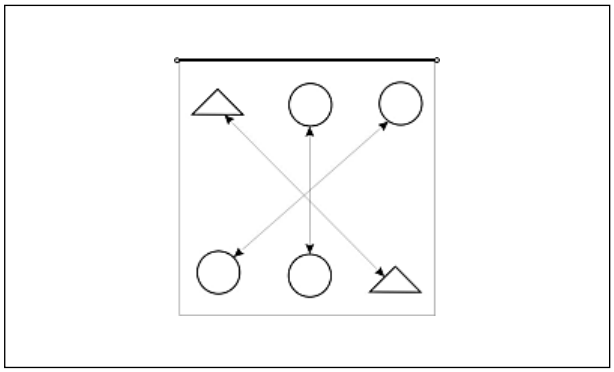


Fig. 3

With this formation, the team becomes much better balanced, because regardless of rotation, there are always one setter and two spikers in the front row. The specialization of spikers at this stage of their progress, (outside spikers, quick spikers) allows for a more complicated organization of attack combinations. Moreover, the front-row setter is the only one responsible for the set-ups.
4-2 is a basic team formation within the youth teams. Despite the good balance of the team and the presence of two specialized front-row spikers, the power of the attack is still not strong enough.

That is why, the 6-2 team formation, a logical development of the 4-2, arises. The positioning of the players is identical with that of 4-2. The main difference is in the functions of the setters. The back-row setter is responsible for the set-ups, whereas the front-row setter is active and efficient as a spiker.
The constant presence of three front-row spikers improves the team's attack capacity and enables it to come up with a rich variety of attack combinations.
There are two basic tactical variants in the positioning of the players. The first one is when the setters follow the quick spikers (See Fig. 4.1). The second model, in which setters preside the quick spikers, is also possible (See Fig 4.2)

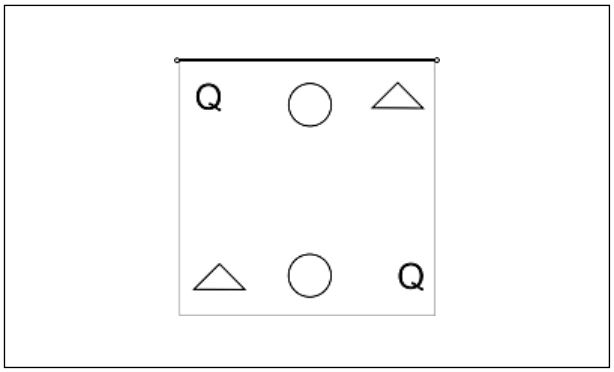


Fig. 4.1

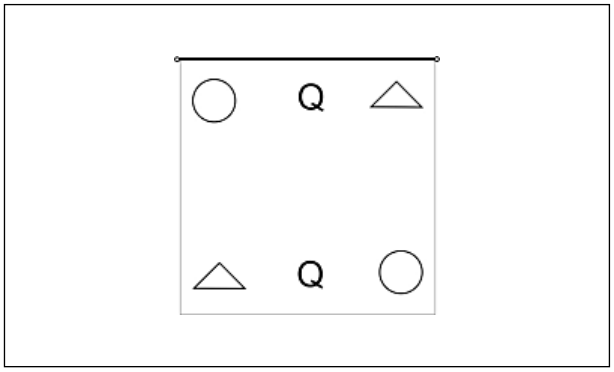


Fig. 4.2

The tight specialization in contemporary Volleyball imposed the 5-1 formation. In the greater part of the high-level teams this team composition is applied, which in effect improves the power of attack by the inclusion of a fifth spiker. The classical positioning of the players is shown in Fig. 5.1 and Fig. 5.2.

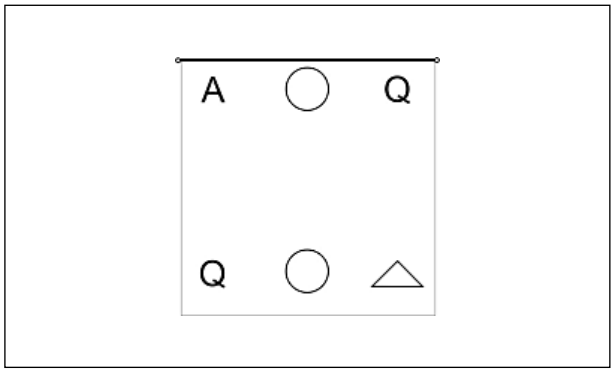


Fig. 5.1

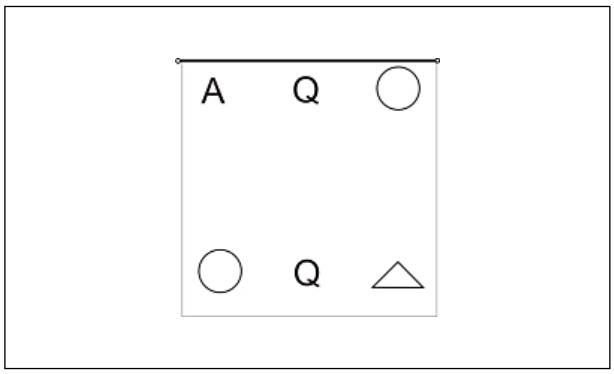


Fig. 5.2

Various tactical variants exist in the use of this team formation. With the presence of a high-class setter and a solid serve reception, the spiker opposite to the setter is a key player, who is usually the main scorer of the team. In the majority of cases the coaches place a spiker with impressive size in this position. This player is not only able to successfully complete attacks against double and triple blocks, but takes part in back-row attacks as well. In case the quality of the serve reception is not satisfactory, it is more apt to place a universal player in this position. A player who, along with his skills as a spiker, can participate in the organization of the attack as a setter (See Fig. 6).

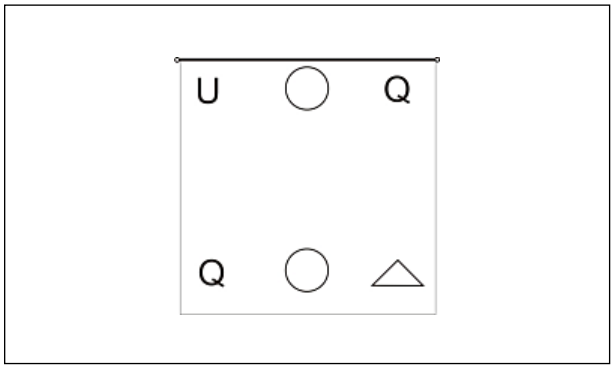


Fig. 6

As a conclusion, we have to emphasize the fact that the choice of a team formation is only based on the stage of development of physical, technical, tactical, and mental capabilities of the players.
Motivated by the desire for faster and greater sports results, coaches of youth teams often apply team formations, inadequate to the extent of preparation, and it is only logical that they do not achieve their goals.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Chapter IX

Basic Tactics

by Mr. Phillipe Blain, President of Coaches Commission

9.1 Team formations and systems

9.2 Offensive tactic

9.3 Defensive tactic

Volleyball is a team sport. The rule forbidding the same player to hit the ball twice in a row makes our sport unique. A player cannot win a match single-handedly. Except for the serve, all plays – be they offensive or defensive – are a combination of several players' actions. In this case, the team concept takes on all its meaning, whether in terms of technique or mindset. The way players complement one another is at the root of our sport. This complementary nature expresses itself in game systems suited to the team that allow for strategies adapted to all situations.

Planning the Team

Planning the team is a project which should be clearly defined, discussed, and accepted by all decision makers after careful thought. The guidelines – types of play, means available short, mid and long term goals – will influence the choices made by the coach, who bears the overall responsibility for the project. He should have his feet firmly planed on the ground and avoid giving in to defeatism. To make the right choices, the coach should analyse every situation with a clear mind.

Once the team has been planned, it is possible to move to the next phase.

Building the Team

This is the phase in which the project becomes a reality and where the means required to build the team have to be set in place.

The team has to be balanced, from the standpoint of technique as well as mindset. It should be able to rely on an environment suited to its needs, on appropriate working conditions, and on players available to reach the objectives that have been set. Effective medical observation, allowing for timely healing and prevention, is indispensable.

The team consists of individuals, the players. They should flourish within the team through personal goals. However, the team requires internal rules that will bind the players together and help them attain the team's collective goals.

Personal Goals

Each player should know the place he is likely to fill within the team, both technically and mentally. This place should correspond to the player's natural abilities so that he can flourish within the team. Personal goals for growth in specific areas should be set for each player.

Internal Rules

Every team requires a set of internal rules, i.e. the relatively rigid framework in which it will operate. Nonetheless, internal rules should leave room for freedom and provide calm working conditions. The more a team is tight-knit, the less it will feel the effects of internal rules. However, insofar as they can help dispel accusations of unfairness against the coach and prevent conflicts between the players, internal rules should be respected at all time.

Organising the Team

The coach should organise his team's play. He does so by 1) adequately positioning the team on the court, 2) structuring the team through game systems and 3) providing the team with collective strategies.

Positioning the Team

As has already been stated, a team need to be balanced in order to be effective. The positioning of players on the court should be studied rotation by rotation, according both to the offensive and defensive positions (respectively on the opponent's serve and on the team's own serve.)

Collective Goals

The team's collective goals are the point of convergence of individual motivations. Collective goals should be ambitious and push the team to outdo itself. But if they appeal to be out of reach, such goals can easily lead to discouragement. All players should accept the team's collective goals as their own. Only then will they truly cement the team together and act as a driving force during phases of training and competition.

"Diversity is a strength or a weakness"

If the team is able to accept individual weaknesses in the pursuit of its collective strength, if each player is prepared to evolve and make sacrifices for the benefit of the team, then diversity becomes an asset rather than a liability and the team's goals will likely be attained. Otherwise, diversity becomes a hindrance and may lead to a waste of energy.

Offensive Position

The balance of the reception lines should be taken into account. Without stable reception, it is difficult to have an effective offensive position. The proper placement of your three receivers is of crucial importance, especially if they are not endowed with the same skills. When selecting your crucial importance, especially if they are not endowed with the same skills. When selecting your team, you should avoid placing the weakest player in 6, i.e. the position most at risk of a jump serve.

The attackers should be positioned according to their offensive abilities. Moreover, you should make sure that a balance exists between the quality of a rotation's reception and its offensive possibilities. If you position your weakest reception line (for example, the weakest receiver in position 6) on the attack line with the least offensive potential on the wings, you are exposing yourself to a series of points from a good server.

One will tend to place the middle blocker with the best offensive skills near the setter. In three forward positions of the setter, the team will only have two attackers on the front line, hence the effectiveness expected of them.

Defensive Position

The type and quality of serve as well as the rotation of players on the court are the first balances to be achieved. A good distribution of servers allows for a better alternation of strategies and a greater variety of combinations. Should the best blocking line be teamed with the strongest or the weakest server? Each team has its own preferred solution and it is up to the coach to identify it.

Use of Various Positions

Even though virtually all the teams currently arrange their players with an attacking receiver in front of the setter in the rotation shown below, other possibilities can be used according to the way your team is composed. For example, Argentina plays with three middle players in a triangle, in order to make the best use of the skills of a player like Milinkovic. Each team has its own requirements and characteristics that should be taken into account by the coach.

Used by virtually all teams, the composition presented in Diagram 1 has the following characteristics: the attacker-receiver (AR) never attacks in position 2 and receives only once in position 6.

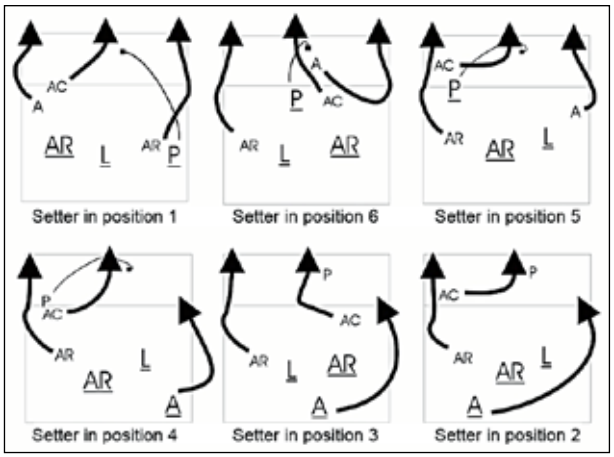


Diagram 1

Diagram 1, with the middle player in front of the setter, can be used in particular when one of the two attacker-receivers is left-handed. In this configuration, such a player will attack in a front position two out of three times in 2. However, this rotation requires a deep penetration of the setter in 5, which is a limiting factor. The solution lies in the ability of the ace spiker to receive a jump serve in this position.

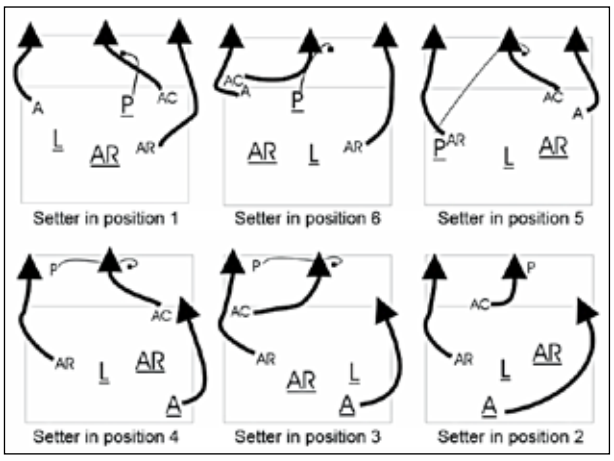


Diagram 2

Game Systems

With the advent of the libero, modern Volleyball has evolved towards a specialisation of roles. The rally point system (RPS) calls for constant reactivity. These changes have led to the implementation of collective systems and strategies intended to score points. A high-level team should comprise players with technical, physical and mental skills who are strategically able to apply increasingly sophisticated systems of play. The complexity of the systems depends on the technical level and physical abilities of the players. The systems used should be adapted to the team.

A game system should allow individual strategies to be expressed to the fullest extent. In order to be effective, these systems should include all members of the team. Being able to implement them as second nature is one of the keys of their effectiveness. If required, each action in Volleyball can be treated as a specific case.

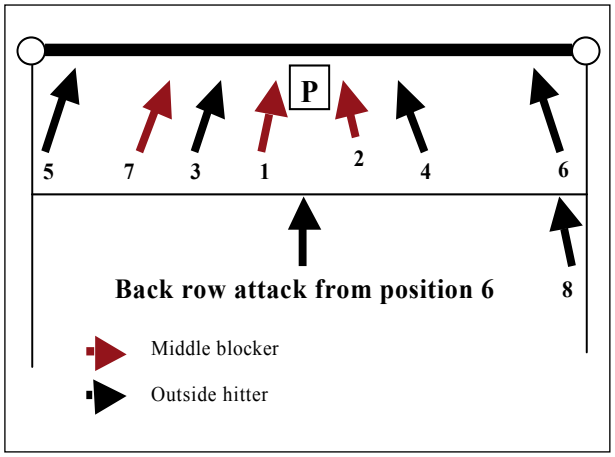
The role of the coach is also to simplify play. The number of systems should not be increased as this could risk diminishing their effectiveness.

Offensive Game Systems (on the opponent's side)

The basis of all offensive game systems is the choice of the quick ball provided by the middle blocker combined with the two or three outside attackers. Their objective is to create an overload or gap in the opponent's block.

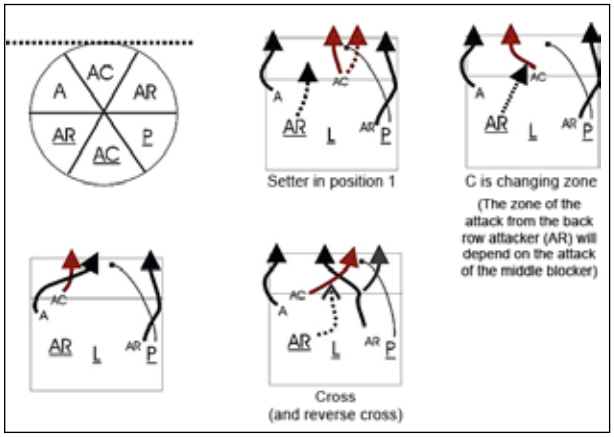
The choice of systems should not be based on theory. The coach should be realistic. The systems will be adapted to each of the team's rotations and should be sufficiently varied to allow for alternating strategies according to the opponent.

Each attack should be codified to allow the setter to communicate rapidly with his attackers. The following codes will be used in this hereafter.



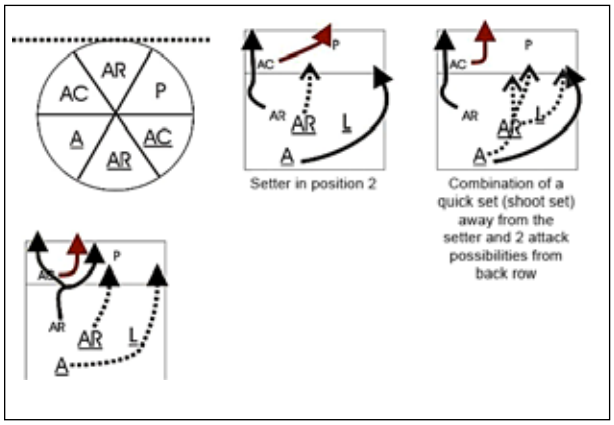
In the diagrams below, we will review the six rotations of the setter and consider the systems that we should apply to them.

Rotation with Setter in Position 1:



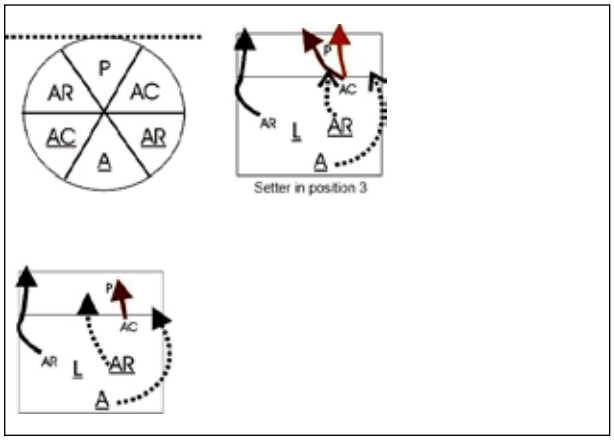
In this rotation, the middle player's starting position allows for all types of attacks: 1, 2 and 7. With attacks 1 and 2, one can create an overload on the opponent's position 4, thus opening intervals on the opponent's positions in 2 and 3. However, we can also combine by crossing the middle attacker and the position 2 attacker. Conversely, we can move the middle player away with attack 7 to isolate the outside player in position 2.

Rotation with Setter in Position 2:



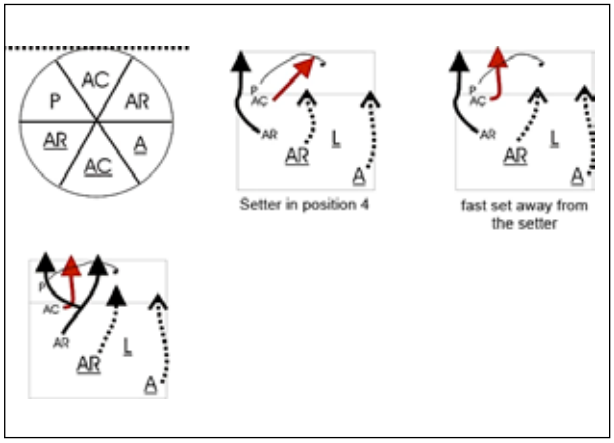
The starting position of the middle player enables quick attacks in front of the setter. If we try to move the middle player to 2, any average reception would block his approach.

Rotation with Setter in Position 3:



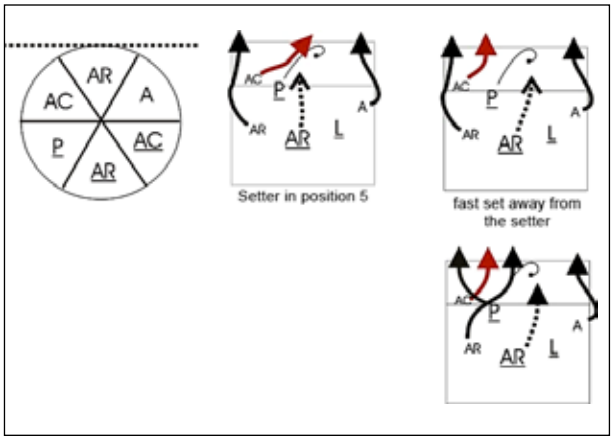
In this position, the approach is disrupted by average receptions that distance the setter from the net. Attack 2 is a good call with the middle player. Combined with the pipe or attack 8, it overloads the opponent's position 2 and isolates the position 4 attacker.

Rotation with Setter in Position 4:



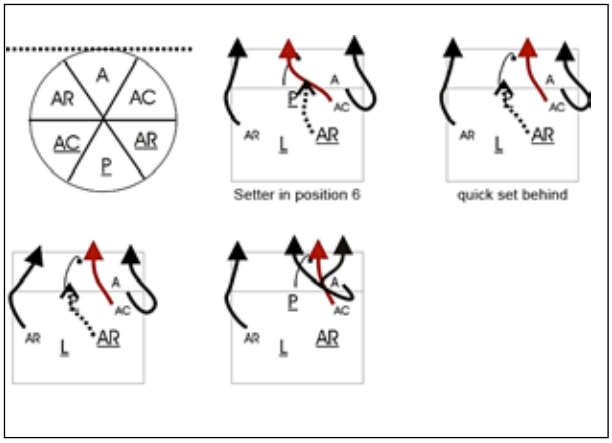
The two rotations with the setter in positions 4 and 5 are similar in their approach. This system resembles the one used for the rotation with the setter in position 2. The ace spiker's effectiveness from the back row will influence the choice of system.

Rotation with Setter in Position 5:



The shot set (7) is a very interesting call: a quick ball that uses the interval between the middle player and the outside player in position 2. It is also easily usable for the setter after an average reception, since the angle remains open.

Rotation with Setter in Position 6:



Similarly to the rotation of the setter in position 3, the starting position of the middle player behind the setter makes it difficult to use him for average reception, except with attack 2. Moreover, the presence of the ace spiker in this position generates an overload that will create openings with the pipe and isolate position 4.

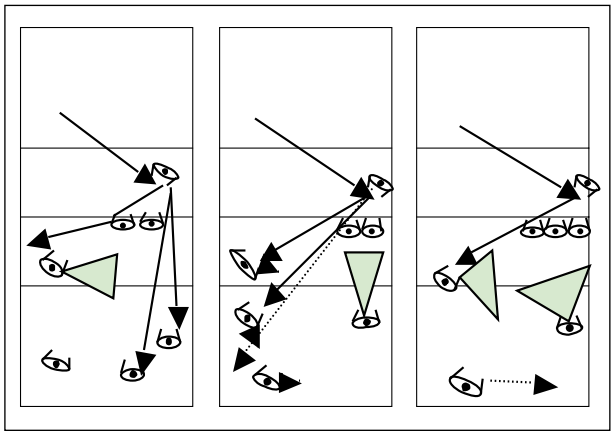
Defensive Game System (on the team's own serve)

Blocking and defensive techniques are closely related. It is hard to defend without good blocking pressure on the attacker. Conversely, an effective rear defence reinforces the effectiveness of the block by making the attacker force his play. Defensive game systems should therefore combine the action of the block and rear defence to perfectly cover the court.

Defensive game systems are designed to respond to recurring play situations. They are intended to thwart the most frequently used offensive systems.

Such systems can be divided into four categories:

1. Organisation on Attack with High Set



When the opponent is in a situation to play only a high ball, the team has the time to implement homogenous blocking systems with two or three blockers.

The organisation with two blockers will vary if one takes a line or diagonal option with the block. But in both cases, this block has to be homogenous and placed according to the attacker's approach.

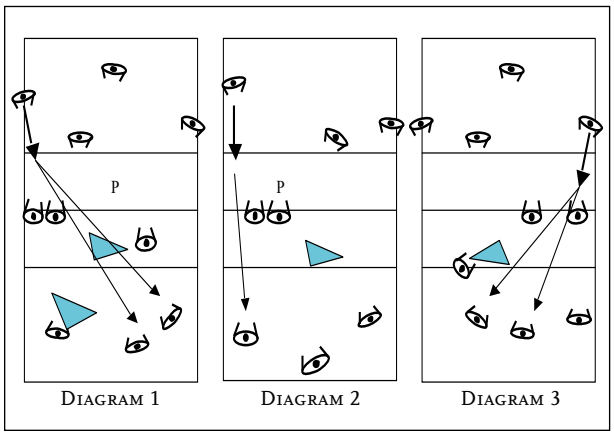
Part of the players will be positioned to defend the powerful attacks outside the block. Others will be responsible for ball that are dumped or deflected by the block. The same organisation can be implemented with the attacker in positions 1 or 2.

The three-man block is an effective technique if set up appropriately. The outside blocker should close the line, which requires that the third blocker announce his presence in the block.

The third blocker should be sure he will be homogenous with the two other players.

This technique is only useful against a powerful attacker. In other cases, it is preferable to trust the rear defence with ball recovery.

2. Organisation on Attack with Block in Reaction



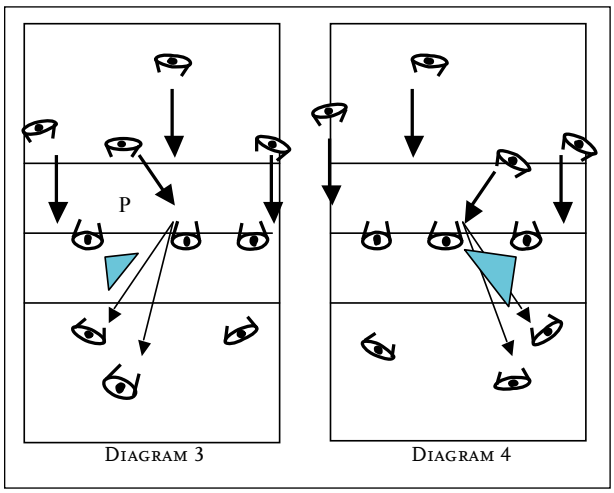
In this tactical option, the aim is to intervene on outside attackers (position 5, 6 and back row attack).

The quick ball is trusted to the rear defence, which takes a position that is more or less central, the outside defenders positioning themselves according to the type of quick ball. The block will only play in reaction to the pass made to the opponent's middle player.

Diagrams 1 and 2 illustrate the defensive organisation with a double-block that is homogenous with options on the line or diagonal. The same diagrams may be performed with the position 2 or 4 attackers.

However, due to the speed and trajectories of outside passes, the middle blocker should sometimes abandon the middle of the block to rear defence and settle for closing the small diagonal (Diagram 3). The rear defence should reposition itself inside the court to cover the zone left open by the block.

3. Organisation on Quick Attack with Man-to-Man Defence



This option gives priority to the intervention of the middle blocker on the quick ball attack of the opponent's middle player.

In ideal reception conditions, the middle blocker jumps with the opponent's middle player. He will try to cover the preferred attack zone. The rear defence covers the other direction with the player in position 6.

If the attacker feels closed in, he may decide to fake the attack just behind the block. This zone should be covered by the front-row players.

In the case of distribution to the outside zones, the advantage will clearly be for the attackers since they will only be opposed by a single blocker. The middle blocker will handle the fake behind the outside defenders.

4. Option with Overload on Specific Attacker

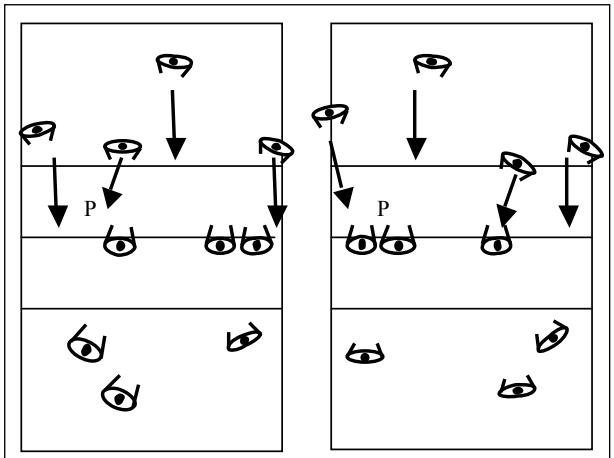


Diagram 7 Diagram 8

These options represent extreme solutions, yet they are indispensable in certain situations.

Using the shot set (Diagram 8) to isolate the player in position 1 or 2 is a commonly used offensive system. With good reception, the middle blocker is usually late, both on the shot set and the ball in 2. He may therefore choose to leave the quick ball for the blocker in position 2 to double up on the opponent's outside defender. This represents a risk, but one that pays off.

The same solution can be used (Diagram 7) to create an overload towards the opponent's position 4.

Transition Game

During a rally in Volleyball, teams go from an offensive to defensive organisation, and vice versa. However, there is a transition move that allows teams to maintain an offensive organisation, i.e. attack coverage. There is no fixed position for the players, but rather some principles to follow.

One player should always be in charge of covering the back-court. When the attacker strikes on the line and is blocked, the ball returns to him. A player should therefore be positioned as a back-up near the attacker.

When the attacker strikes on the short diagonal, the ball will be deflected towards the opponent's outside defender. A player should be assigned the responsibility of this zone.

Both remaining players should cover the centre of the court.

Collective Strategies

Collective strategies are defined as a team play used to obtain maximum results in any given action. Strategies should respect the rules of the game, the conditions of the match, the physical, technical and mental abilities of the players and last, but not least, the opponent's strategies.

Offensive Strategies

The team's offensive strategies are the responsibility of the setter. His primary role in the team is to distribute setting passes to put the attackers in the best possible position.

The initial choice of the offensive system depends on the game plan defined according to:

- The position and abilities of the opponent's blockers. Depending on the player, it may be effective to create overloads on his position to try and isolate him by distancing the middle player;
- The knowledge of the opponent's defensive game. The middle blockers have habits and therefore tendencies in their choice of system;
- The quality of the opponent's server. It is not advisable to prepare a system with combinations that require an optimum quality of reception against a powerful jump server;
- The offensive qualities of the rotation.

The setter will have to adapt his choices according to the quality and place of reception. He will also have to pay attention to the movements of the opponent's middle blocker during the play and the choices he makes.

After the play, the setter should analyse – and memorise - the choices made by the opponent-s middle blocker in a real situation. In this way, he will be able to draw on the experience he has gathered when a similar situation reoccurs.

The setter should keep the big points in mind and carefully plan their management. The diversity of

choices made during the set will allow the most effective combination to be used at the right time – without being too predictable. If the setter "exhausts" his best attacker, it is likely that the latter will be less effective on a crucial occasion.

The experience of the setter is vital in this respect. Knowing how to distribute balls to each attacker and choosing the right moment for distribution is the cornerstone of an offensive strategy.

Defensive Strategies

The advent of RPS has limited the number of playing actions during the course of the set. To be successful, a team should make an effective use of defensive strategies, even when the number of actions is limited.

Risk-taking during the serve should remain proportional, both the ability of the server and to the need to make things difficult for the opponent. Goals should be individualised according to the server and to the opponent's offensive line. With the exception of very powerful servers, the zone of impact should be emphasised over power. Certain zones are at greater risk than others. The variety of hits and the tactical aspect of the serve should be used according to defensive options.

Together with the libero, the middle blocker is responsible for defensive choices. On good serve reception, the opponent's setter has various offensive choices open to him. As a result, the speed and height of play require the defending team to make its own defensive choices, since it is impossible to defend everything.

Given that the decision-making time is limited, the system for calling plays should be clear and simple.

The middle blocker is paired against the opponent's setter. He should position his outside blockers and call the chosen defensive play.

The choices in this respect stem from the knowledge of the opponent's offensive game plan:

- The most frequently used offensive systems for each rotation;
- The best called attackers and to conditions for their use according to the reception and the importance of points;
- The habits of the setter according to his position when setting.

The opponent's offensive effectiveness will also influence the choice of systems. The more effective the opponent's offence, the greater the recourse to defensive options.

The quality and type of serve used by one's team is another factor in decision-making. Where possible, a tactical service should be combined with the option that has been selected.

Respecting the choices that have been made and the proper execution of plays will ensure defensive effectiveness. Only the quality of reception should lead the team to change its tactical choices. The limitation of the opponent's offensive possibilities should bring about an immediate adaptation of defensive play.

Effectiveness of defensive play on high balls is the mark of a great team.

Individual Strategies

They result from the combination of a player's observation skills and technical mastery.

Individual strategies serve primarily in the realisation of collective choices.

The difference between a good player and a champion lies in the latter's ability to maintain a high degree of performance of individual strategies, regardless of the environment.

When attacking, one should choose the direction and type of hit according to the opponent's defensive choices.

When blocking, one should select the type of movement, position, timing and height of the block according to the attacker's approach and zone to be covered.

When serving, one should determine the zone of impact of one's serve according to the quality of the receivers or the collective tactical choice and decide on the risk corresponding to the way a match is progressing and the effectiveness of the opponent's offensive line.

When defending, one should position oneself according to the placement of the block in relation to the attacker, and assume an attitude of defence corresponding to the type of intervention required by one's role in a chosen system.


VENEZUELA
14

Chapter X

Basic Physical Conditioning

by Mr. Phillipe Blain, President of Coaches Commission

Volleyball always requires technical, physical and mental skills.

Our job, as a coach is to study our activity for clarifying the working axis.
Physical training doesn't escape this rule.

The internal logic of Volleyball is to make sure that the ball falls down in the opponent court as well as to avoid the ball falling in our own court. Tools at our disposal are jumping, hitting, running as well as falling.

Actions are intensive, discontinuous and short, information handling is determined from problems with rhythm and timing.

It is from these sport requirements that we are going to form and plan physical training.

Main axis in physical training in Volleyball

1. Priority Axis

The tools that we mentioned in the previous paragraph are all connected to co-ordination. This specific co-ordination is the Volleyball player's final goal. Any physical training should incorporate components of co-ordination in addition to being general, oriented or specific. All parts of training are suspended from this logic. They will be tools serving this target.

– For instance we prefer a strengthening work which uses ground support more than strengthening by machines.

– Endurance development will include ground support forms close to speciality (shuttle running forward, back and lateral) more than working only based on athletic running.

As demonstrated by analysis of Volleyball activity, almost all specific movements are made with high speed or maximal speed. The action times are very short (5 or 10 seconds). So it is a "power/speed" activity. Any significant progress goes through permanent request of these two components, simultaneously or successively.

We have to work an intra-muscular co-ordination: the strength and an inter-muscular co-ordination: speed. Combination modes proposed to the coach to organise training sessions are almost unlimited and this potential diversity allows for covering all training axis as required by Volleyball.

The Planning

For young players, co-ordination components learning, on all types, make up quite exclusive axis of learning work.

Strength working is present by sheathing of the abdominal belt and back spine axis. It aims both at muscular strengthening and proprioception (pelvis

position, feeling of ground support in static or dynamic).

During puberty, we will see the same pedagogical positioning: priority to the position and to movements.

Teenagers should learn basic movements of muscular strengthening (all squats pull ups, weight lifting snatching and stretching).

All of these situations will be made with light or null loads. Progressive increasing of these loads will be done according with control of these exercises.

From junior to the top level, the progression is going to take place from large co-ordination to a more specific co-ordination (hard strengthening, medium plyometrics with high outburst). This kind of work may be considered only if prior learning is known. If it is not the case, players must acquire these bases even if his age or sport targets justify a more intensive training.

Consequently the strength development as described previously, will be with co-ordination aspects, priority axis of Volleyball player training.

2. The secondary axis

For a young player it is vital to develop motor skills, general or specific, as large as possible. Faced with different and various situations and parameters, the player will learn to adapt himself. So he could integrate more quickly and in a stable manner, varied technical skills which will be required of him.

This multiplicity will mobilize all components of player's activity which consequently determine a more balanced development.

Later on with specialization and more intensified training, the work of preventing compensation (shoulder i.e. rotators, knee i.e. vastus medialis and generally the back area etc.) is going to become necessary.

This will avoid physical maladjustment due to only Volleyball training. At the same time of morphological modifications and increasing of muscular tenses, the time dedicated to increase flexibility will be extended.

This will be made efficiently only if abilities used are under control.

Specific Endurance

Volleyball is a type of "power/speed" sport where the quality of ground support is influential. Paradoxically, recent evolution of the game rules strengthens this parameter (decreasing effective match time). The necessity for maintaining a high degree of quality leads to the notion of specific endurance.

The running of major competitions (continental championships, world championships, Olympic Games) as round robin preliminaries with semi final and finals requires a constant performance.

Rally points system where each point is important enforces an optimal recovery between rallies as well.

The top level player must be able to perform after a lot of matches and important running rallies. They must have short and long term recovery. Specific endurance should pay attention to requirements in each phase.

Taking off, flexibility and specific endurance is the constituents of the secondary axis of training.

3. Personalised training

The search for performance at top level requires a players' specialisation. Physical preparation follows the same scheme.

The coach seeks to determine the player's profile, paying attention to different issues:
- Muscular and morphological qualities
- Age
- Experience in terms of physical training
- Post and duties as a player

While respecting the main and secondary principles of physical work, the individualisation of each player not only optimises but improves the quality of the team.

Conclusion

Physical training is an important element of Volleyball.

It allows a player's balanced development in addition to being able to express their technical skills as much as possible.

It is important to remember that recovery is a critical part of physical conditioning.

Chapter XI

Rules of the Game

by Mr. Thomas Blue, Assistant Secretary of FIVB Refereeing Commission

Instructions for Coaches and Players

Participants' Basic Responsibilities

Team Composition

In general, a team may consist of a maximum of 12 players, one coach, one assistant coach, one trainer(physiotherapist) and one medical doctor (Rule 4.1.1). Each team has the right to designate from the list of 12 players up to two (2) specialized defensive players – "Liberos" (Rule 19.1.1). Only the players recorded on the scoresheet may enter the court and play in the match. Once the coach and the team captain have signed the scoresheet prior to the match, the recorded players cannot be changed (Rule 4.1.3).

Location of the Team

The players not in play should either sit on their team bench or be in their warm-up area. The coach and other team members sit on the bench, but may temporarily leave it (Rule 4.2.1). Only the team members are permitted to sit on the bench during the match and to participate in the warm-up session (Rule 4.2.2).

The Coach

The coach may give instructions to the players on the court. The coach may give these instructions while standing or walking within the free zone in front of his/her team's bench from the extension of the attack line up to the warm-up area, without disturbing or delaying the match (Rule 5.2.3.4). For FIVB competitions, the coach is restricted to performing his/her function behind the coach's restriction line. The coach is encouraged to do his/her job as a coach by instructing or encouraging his/her players. However, the coach may not interfere with any of the officials in their performance of their duties.

The assistant coach sits on the team bench, but has no right to intervene in the match (Rule 5.3.1). The assistant coach, as well as the trainer (physiotherapist) and medical doctor, may give instructions to the players on the court, but they have no right to stand or walk in front of the team bench.

Interruptions (time-outs and/or substitutions) may be requested only by the coach or, in his or her absence, by the game captain. The request for time-out is made by showing the corresponding hand signal when the ball is out of play and before the whistle for service. In FIVB, World and Official Competitions, a buzzer is used to interrupt the match when requesting a time-out and then the coach must immediately show the appropriate hand signal (Rule 15.2.1).

A request for substitution is made by the entrance of the substitute player(s) into the substitution zone, ready to play, during a regular interruption. This request will be acknowledged by the scorer sounding a buzzer or the Second Referee blowing a whistle (Rule 15.10.3). Using this procedure, there is no need for the coach or captain to show a signal or press a buzzer when requesting substitution(s).

A request for one or two time-outs and one request for player substitution by either team may follow one another with no need to resume the game (Rule 15.3.1). However, a team is not authorized to make consecutive requests for player substitution during the same game interruption. Two or more players may be substituted during the same interruption (Rule 15.3.2).

Equipment

A player's equipment consists of a jersey, shorts, socks (the uniform) and sport shoes (Rule 4.3). The colour and the design for the jerseys, shorts and socks must be uniform *(except for the Libero)* and clean for the entire team (Rule 4.3.1). The players' jerseys must be numbered from 1 to 18 (Rule 4.3.3), except for FIVB and World Competitions for Seniors, when the jerseys must be numbered from 1 to 20. The colour and brightness of the numbers must contrast with the colour and brightness of the jerseys (Rule 4.3.3.1). A team captain must have on his/her jersey a stripe of 8 x 2 cm underlining the number on the chest (Rule 4.3.4). It is forbidden to wear objects that may cause injury or give an artificial advantage to the player (Rule 4.5.1).

The Captain

Both the team captain and the coach are responsible for the conduct and discipline of their team members (Rule 5). The Libero can be neither the team captain nor the game captain (Rule 19.1.4).

Prior to the match, the team captain signs the scoresheet and represents his/her team at the coin toss (Rule 5.1.1).

During the match, the team captain is the game captain while on the court. If the team captain is not on the court, the coach or the team captain must assign another player on the court, but not the Libero, to assume the role of game captain (Rule 5.1.2).

When the ball is out of play, only the game captain is authorized to speak to the referees (Rule 5.1.2) to:

1. Ask for an explanation on the application or interpretation of the Rules. If the game captain does not agree with the explanation of the first referee, he/she may choose to protest against such decision and he/she must immediately indicate to the first referee that he/she reserves the right to record an official protest on the scoresheet at the end of the match (Rule 5.1.2.1)
2. Ask authorization to change equipment, verify the position of the teams, or check the floor, net or ball (Rule 5.1.2.2).
3. In the absence of the coach, request time-outs and/or substitutions (Rule 5.1.2.3).

At the end of the match, the team captain thanks the referees and signs the scoresheet to ratify the outcome (Rule 5.1.3.1; and if his/her rights have been preserved, to confirm and record on the scoresheet any official protest regarding the referee's application or interpretation of the Rules (Rule 5.1.3.2).

Structure of Play

The Toss

Before the match, the first referee carries out a coin toss in the presence of the team captains to determine which team will serve first and on which sides the teams will play the first set (Rule 7.1). The winner of the toss chooses either (1) the right to serve or to receive the service or (2) the side of the court. The loser of the toss takes the remaining choice.

Warm-up Session

Prior to the match, if the teams have previously had a playing court at their disposal, each team will have a 3-minute warm-up period at the net. If there is no warm-up court, they may have 5 minutes each. In the case of consecutive warm-ups, the team that has the first service takes the first turn at the net (Rule 7.1.3). If both captains agree to warm-up at the net together, the teams may do so for 6 or 10 minutes, depending on the presence or absence of a warm-up court (Rule 7.2.1).

Team Starting Line-up

The team's starting line-up indicates the rotational order of the players on the court. This order must be maintained throughout the set (Rule 7.3.1). Before the start of each set, the coach must present the starting line-up of his/her team on a line-up sheet. The line-up sheet will show the position of each starting player (Rule 7.3.2). Once the line-up sheet has been delivered to the second referee, no change in the line-up may be made without a normal substitution (Rule 7.3.4). If there is a discrepancy between the players on the court and what is registered on the line-up sheet, the positions must be resolved according to the line-up sheet, without sanction (Rule 7.3.5). The players who are not in the starting line-up of a set are the substitutes for that set (except for the Libero) (Rule 7.3.3). If a player is on the court and is not registered on the line-up sheet, that player must be changed according to the line-up sheet (Rule 7.3.5.2). However, if the coach wishes to keep the non-registered player on the court, he/she may do so by requesting a normal substitution, which will be recorded on the scoresheet (Rule 7.3.5.3).

Substitution of Players

A substitution is the act by which a player, after being recorded by the scorer, enters the game to occupy the position of another player who must leave the court. Substitution requires the referee's authorization (Rule 15.5). Replacements involving the Libero are not

substitutions and consequently not recorded on the scoresheet (Rule 19.3.2.1).

Six substitutions are the maximum permitted per team per set (Rule 15.6.1). A player of the starting line-up may leave the game, but only once in a set; and re-enter, but only once in a set and only to his/her previous position in the line-up (Rule 15.6.2). A substitute player may enter the game in place of a player of the starting line-up, but only once per set, and he/she can only be substituted by the same starting player (Rule 15.6.3).

Substitution must be carried out within the substitution zone (Rule 15.10.1). The substitution request is made by the entrance of the substitute(s) into the substitution zone, at which time the substitute(s) must be ready to enter. If the player(s) is not ready to enter at the moment of the request, the substitution will not be granted and the team will be sanctioned for a delay (Rule 15.10.3). For FIVB World and Official Competitions, numbered paddles are used to facilitate the substitution.

If a team intends to make more than one substitution simultaneously, all the substitutes must report to the substitution zone at the same time to be considered in the same request. When multiple substitutions are requested, the substitutions must be made in succession, one pair of players at a time (Rule 15.10.4).

Exceptional Substitution

An injured player (except the Libero) who cannot continue playing should be substituted legally. If this is not possible, the team is entitled to make an exceptional substitution. This means that any player who is not on the court at the time of the injury, except the Libero or his/her replacement player, may substitute into the game for the injured player. The substituted injured player is not allowed to re-enter the match (Rule 15.7).

Playing Actions

Ball "In" or "Out"

The ball is "in" when it touches the floor of the playing court including the boundary lines (Rule 8.3). The ball is "out" when:
(1) the part of the ball which contacts the floor is completely outside the boundary lines (Rule 8.4.1);
(2) it touches an object outside the court, the ceiling or a person out of play (Rule 8.4.2);
(3) it touches the antennae, ropes, posts or the net itself outside the side bands (Rule 8.4.3);
(4) it crosses the vertical plane of the net either partially or totally outside the crossing space, except in the case of Rule 10.1.2 (Rule 8.4.4);
(5) it crosses completely the lower space under the net (Rule 8.4.5).

Team Hits

The team is entitled to a maximum of three hits (in addition to blocking), for returning the ball. If more are used, the team commits the fault of "Four Hits." The hits of the team include not only intentional hits by the players, but also unintentional contacts with the ball (Rule 9.1).

The ball may touch various parts of the body, provided that the contacts take place simultaneously (Rule 9.2.3). The ball may be touched with consecutive contacts by one player during blocking (Rule 9.2.3.1) or during the first hit of the team in one action to play the ball (Rule 9.2.3.2).

Characteristics of the Hit

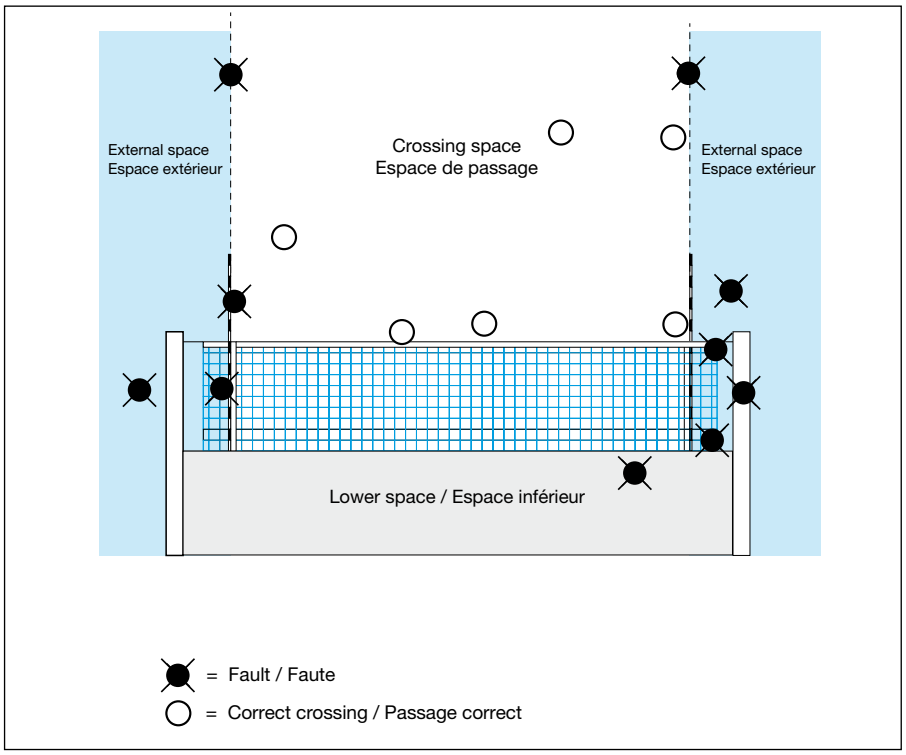
The ball may touch any part of the body (Rule 9.2.1). The ball must be hit, not caught and/or thrown. It can rebound in any direction (Rule 9.2.2).

In accordance with the spirit of FIVB world competitions and to encourage longer rallies and spectacular actions, only the most obvious violations will be penalized. However, when a player is not in a very good position to play the ball, the first referee will be less severe in his/her judgment of ball handling faults. For example:

1. The setter running to play the ball or obliged to make a very quick action to reach the ball in order to set.
2. The players obliged to run or make very quick actions to play a ball after it has rebounded from the block or from another player.
3. The first team contact may be freely made except if the player catches or throws the ball *(FIVB Guidelines and Instructions for Referees, 7.)*.

Ball Crossing the Net

The ball sent to the opponent's court must go over the net within the crossing space (Rule 10.1.1a).

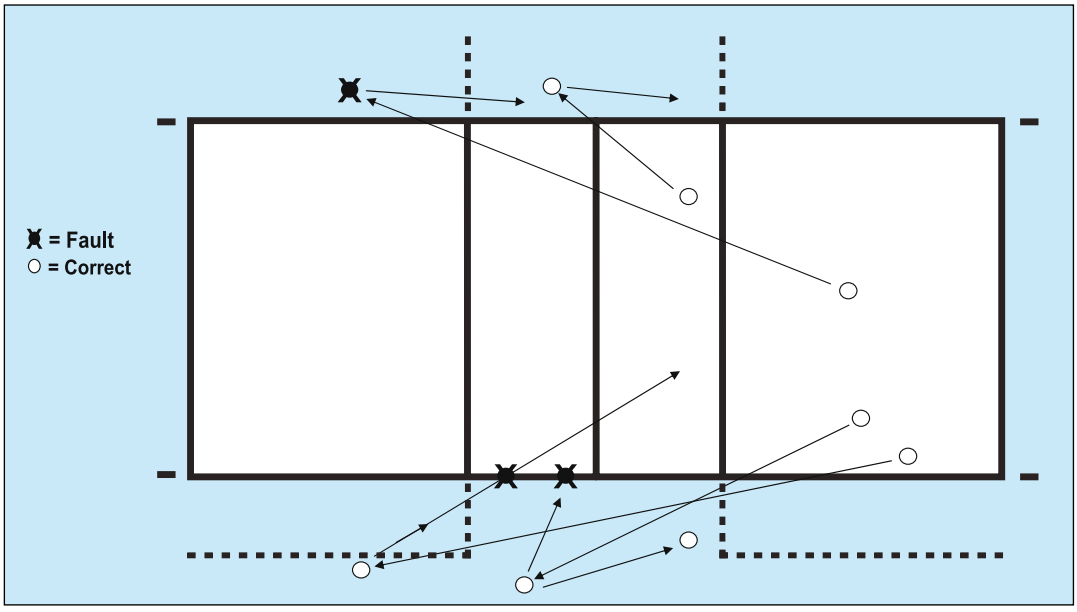


Ball crossing the vertical plane of the net to the opponent court

The ball that has crossed the net plane to the opponent's free zone totally or partly through the external space (see diagram 10.1.1b) may be played back within the team hits (Rule 10.1.2), provided that:

1. The opponent's court is not touched by the player (except as provided in Rule 11.2.2.1).
2. The ball, when played back, crosses the net plane again totally or partly through the external space on the same side of the court.

The opponent team may not prevent such action.



Ball crossing the vertical plane of the net to the opponent free zone

Ball Touching the Net

While crossing the net, the ball may touch it (Rule 10.2).

Player Reaching Beyond the Net

In blocking, a blocker may touch the ball beyond the net, provided that he/she does not interfere with the opponents' play before or during the attack hit (Rule 11.1.1).

Each team must play within its own playing area and space (except Rule 10.1.2). The ball may, however, be retrieved from beyond the free zone (Rule 9). A player is permitted to pass his/her hand beyond the net after an attack hit, provided the contact has been made within his/her own playing space (Rule 11.1.2).

Player Penetration Under the Net

It is permitted to penetrate into the opponent's space under the net (air space over the court), provided that this does not interfere with the opponent's play (Rule 11.2.1).

Penetration into the opponent's court, beyond the centre line:

- To touch the opponent's court with a foot (feet) is permitted, provided that some part of the penetrating foot (feet) remains either in contact with or directly above the centre line (Rule 11.2.2.1).
- To touch the opponent's court with any part of the body above the feet is permitted provided that it does not interfere with the opponent's play (Rule 11.2.2.2).

Player Contact with the Net

Contact with the net by a player is not a fault, unless it interferes with the play (Rule 11.3.1).
A player interferes with play by (amongst others):

- Touching the top band of the net or the top 80 cm of the antenna during his/her action of playing the ball, or
- Taking support from the net simultaneously with playing the ball, or
- Creating an advantage over the opponent, or
- Making actions which hinder an opponent's legitimate attempt to play the ball. (Rule 11.4.4)

Execution of the Service

The ball shall be hit with one hand or any part of the arm after being tossed or released from the hand(s) (Rule 12.4.1). Only one toss or release of the ball is allowed. Dribbling or moving the ball in the hands is permitted (Rule 12.4.2). At the moment of the service hit or take-off for a jump service, the server must not touch the court (the end line included) or the ground outside the service zone. After the hit, he/she may step or land outside the service zone, or inside the court (Rule 12.4.3). The server must hit the ball within 8 seconds after the first referee whistles for service (Rule 12.4.4).

Screening

The players of the serving team must not prevent their opponent, through individual or collective screening, from seeing the server or the flight path of the ball (Rule 12.5.1).

A player or group of players of the serving team make a screen by waving arms, jumping or moving sideways, during the execution of the service, or by standing grouped to hide the flight path of the ball (Rule 12.5.2).

Attack Hit and Restrictions

All actions that direct the ball toward the opponents, with the exception of service and block, are considered to be attack hits (Rule 13.1.1). An attack hit is completed at the moment the ball completely the vertical plane of the net or is touched by an opponent (Rule 13.1.3).

A front-row player may complete an attack hit at any height, provided that the contact with the ball has been made within the player's own playing space (Rule 13.2.1).

A back-row player may complete an attack hit at any height from behind the front zone:

1. At his/her take-off, the player's foot (feet) must neither have touched nor crossed over the attack line (Rule 13.2.2.1).
2. After his/her hit, the player may land within the front zone (Rule 13.2.2.2).

A back-row player may also complete an attack hit from the front zone if, at the moment of the contact, part of the ball is lower than the top of the net (Rule 13.2.3).

No player is permitted to complete an attack hit on the opponent's service, when the ball is in the front zone and entirely higher than the top of the net (Rule 13.2.4).

Blocking

Blocking is the action of player(s) close to the net to intercept the ball coming from the opponents by reaching higher than the top of the net, regardless of the height of the ball contact. Only front-row players are permitted to complete a block (Rule 14.1.1) but at the moment of contact with the ball, part of the body must be higher than the top of the net.

A block attempt is the action of blocking without touching the ball (Rule 14.1.2). A block is completed whenever the ball is touched by a blocker (Rule 14.1.3). A collective block is executed by two or more players close to each other and is completed when one of them touches the ball (Rule 14.1.4).

Blocking within the Opponent's Space

In blocking, the player may place his/her hands and arms beyond the net provided that this action does not interfere with the opponents' play. Thus, it is not permitted to touch the ball beyond the net until an opponent has executed an attack hit (Rule 14.3).

Interruptions and Delays

Time-Outs

Each team is entitled to request a maximum of two time-outs per set (Rule 15.1). All requested time-outs last for 30 seconds. For FIVB World and Official Competitions, in sets 1-4, two additional 60-second "Technical Time-Outs" are applied automatically when the leading team reaches the 8th and 16th points. In the deciding (5th) set, there are no "Technical Time-Outs;" only two time-outs of 30-seconds duration may be requested by each team (Rule 15.4.1).

Improper Requests

It is improper to request an interruption:

1. During a rally or at the moment of, or after, the whistle to serve (Rule 15.11.1.1)
2. By a non-authorized team member (Rule 15.11.1.2)
3. For player substitution before the game has been resumed from a previous substitution by the same team (Rule 15.11.1 3)
4. After having exhausted the authorized number of time-outs and player substitutions (Rule 15.11.1.4).

The first improper request in the match that does not affect or delay the game shall be rejected without any other consequences (Rule 15.11.2). Any further improper request in the match by the same team constitutes a delay (Rule 15.11.3).

Game Delays

An improper action of a team that defers resumption of the game is a delay and includes, among others:

1. Delaying a substitution (Rule 16.1.1).
2. Prolonging other game interruptions, after having been instructed to resume the game (Rule 16.1.2).
3. Requesting an illegal substitution (Rule 16.1.3).
4. Repeating an improper request (Rule 16.1.4).
5. Delaying the game by a team member (Rule 16.1.5).

"Delay warning" and *"delay penalty"* are team sanctions (Rule 16.2.1). Delay sanctions remain in force for the entire match (Rule 16.2.1.1) and are recorded on the score sheet (Rule 16.2.1.2). The first delay in the match is sanctioned by a *"delay warning"* (Rule 16.2.2). The second and subsequent delays of any type by the same team in the same match constitute a fault and are sanctioned with a *"delay penalty"* – point and service to the opponents (Rule 16.2.3). Delay sanctions imposed before or between sets are applied in the following set (Rule 16.2.4).

The Libero Player

Designation of the Libero Player

Each team has the right to designate among the list of players up to two (2) specialized defensive players – "Liberos" (Rule 19.1.1). One Libero designated by the coach before the start of the match will be the acting Libero. If there is a second Libero, he/she will act as the second Libero (Rule 19.1.3). The Libero(s) must be recorded on the score sheet before the match in the special lines reserved for this (Rule 19.1.2). Regardless of the place in the special lines, either Libero may start the match. The Libero(s) may be neither team captain nor game captain (Rule 19.1.4).

Equipment

The Libero player(s) must wear a uniform (or jacket/bib for the re-designated Libero) whose jersey(s) at least must contrast in colour with that of other members of the team. The Libero uniform may have a different design, but it must be numbered like the rest of the team members (Rule 19.2).

Actions Involving the Libero

The Libero is allowed to replace any player in a back row position (Rule 19.3.1.1).

He/she is restricted to perform as a back-row player and is not allowed to complete an attack hit from anywhere (including playing court and free zone) if at the moment of the contact, the ball is entirely higher than the top of the net (Rule 19.3.1.2). He/she may not serve, block or attempt to block (Rule 19.3.1.3).

A player may not complete an attack hit from higher than the top of the net if the ball is coming from an overhand finger pass by a Libero in his/her front zone. The ball may be freely attacked if the Libero makes the same action from behind the front zone (Rule 19.3.1.4).

Libero Replacements

Replacements involving the Libero are not counted as regular substitutions. They are unlimited, but there must be a completed rally between two Libero replacements. The Libero can only be replaced by the player whom he/she replaced or by the other Libero Player (Rule 19.3.2.1). The regular replacement player may replace either Libero.

Replacements must only take place while the ball is out of play and before the whistle for service. At the start

Misconduct Sanction Scale

CATEGORIES	OCCURRANCE	OFFENDER	SANCTION	CARDS	CONSEQUENCE
RUDE CONDUCT	*First	Any member	Penalty	Yellow	A point and service to the opponent
	*Second	Same member	Expulsion	Red	Shall leave the playing area and stay in the penalty area for remainder of the set
	*Third	Same member	Disqualification	Red+Yellow jointly	Shall leave the Competition Control Area for the remainder of the match
OFFENSIVE CONDUCT	*First	Any member	Expulsion	Red	Shall leave the playing area and stay in the penalty area for remainder of the set
	*Second	Same member	Disqualification	Red+Yellow jointly	Shall leave the Competition Control Area for the remainder of the match
AGGRESSION	*First	Any member	Disqualification	Red+Yellow jointly	Shall leave the Competition Control Area for the remainder of the match

Delay Sanction Scale

CATEGORIES	OCCURRANCE	OFFENDER	SANCTION	CARDS	CONSEQUENCE
DELAY	*First	Any member of the team	Delay Warning	Hand signal No. 25 with no card	Prevention - no penalty
	*Second (and subsequent)	Any member of the team	Delay Penalty	Hand signal No. 25 with yellow card	A point and service to the opponent

of each set, the Libero cannot enter the court until the second referee has checked the starting line-up (Rule 19.3.2.2). A replacement made after the whistle for service but before the service hit should not be rejected but must be the object of a verbal warning after the end of the rally. Subsequent late replacements shall result in the play being interrupted immediately and the imposition of a delay sanction (Rule 19.3.2.3). The Libero and the replacing player may only enter and leave the court by the "Libero Replacement Zone" (Rule 19.3.2.4).

Re-designation of a new Libero

The coach has the right to replace the acting Libero with the other Libero for any reason, after a completed rally, at any time during the match. after a completed rally (Rule 19.3.3.1). If the team has only one Libero Player and the Libero Player is declared unable to play, the coach may designate as new Libero one of the players (replacement player excepted) not on the court at the moment of the re-designation. The Libero who leaves the game in this manner may not re-enter to play for the remainder of the match. The player thus re-designated as Libero must remain as Libero for the remainder of the match (Rule 19.3.3.1). In the case of a re-designated Libero, this player's number must be recorded in the scoresheet remarks box (Rule 19.3.3.2).

Participants' Conduct

Sportsmanlike Conduct

Participants must know the "Official Volleyball Rules" and abide by them (Rule 20.1.1). Participants must accept referees' decisions with sportsmanlike conduct, without disputing them. In case of doubt, clarification may be requested only through the game captain (Rule 20.1.2). Participants must refrain from actions or attitudes aimed at influencing the decisions of the referees or covering up faults committed by their team (Rule 20.1.3).

Fair Play

Participants must behave respectfully and courteously in the spirit of FAIR PLAY, not only toward the referees, but also toward other officials, the opponents, team mates and spectators (Rule 20.2.1). Communication between team members during the match is permitted (Rule 20.2.2).

Misconduct and its Sanctions

Minor Misconduct

Minor misconduct offences are not subject to sanctions. It is the first referee's duty to prevent the teams from approaching the sanctioning level by issuing a verbal or hand signal warning to a team member or to the team through the game captain. This warning is not a sanction and has no immediate consequences. It should not be recorded on the scoresheet (Rule 21.1).

Misconduct Leading to Sanctions

Incorrect conduct by a team member toward officials, opponents, team mates or spectators is classified in three categories according to the seriousness of the offence (Rule 21.2):

1. Rude conduct: action contrary to good manners or moral principles, or any action expressing contempt (Rule 21.2.1). Note: the "contempt phrase will move to Offensive conduct" in the 2012 edition, since it fits more easily with "insulting words…"
2. Offensive conduct: defamatory or insulting words or gestures (Rule 21.2.2).
3. Aggression: physical attack or aggressive or threatening behaviour (Rule 21.2.3).

According to the judgment of the first referee and depending on the seriousness of the offence, the sanctions to be applied and recorded on the scoresheet are:

1. Penalty (Rule 21.3.1) – The first rude conduct in the match by any team member is penalized with a point and service to the opponent.
2. Expulsion (Rule 21.3.2) – A team member who is sanctioned by expulsion shall not play for the rest of the set and must remain seated in the penalty area with no other consequences. An expelled coach loses his/her right to intervene in the set and must remain seated in the penalty area.
3. Disqualification (Rule 21.3.3) – A team member who is sanctioned by disqualification must leave the Competition Control Area for the rest of the match with no other consequences.

Conclusion

The Official Volleyball Rules have evolved to provide a basis for an exciting, athletic and skilful contest. The Rules continue to evolve and it is important for not only referees, but also coaches and players to maintain current understanding of the Rules and the interpretations of the Rules. When the participants all know the Rules well and contest their matches within the context of the Rules, it is most likely that the team with the superior talent, skills, training and motivation will decide the match.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Chapter XII

Medical Aspects

by Dr. Roald Bahr, President of Medical Commission

Principles of Prevention and Treatment of Common Volleyball Injuries

Injuries are, regrettably, an unavoidable hazard of sports participation. Although volleyball and beach volleyball are by most estimates relatively safe sports – particularly in comparison to other sports such as football (soccer) – epidemiologic research has revealed that volleyball athletes are at risk for certain types of injuries. Serious injuries which interfere with the athlete's ability to participate have obvious immediate consequences (time lost from training and competition) and may have long term implications as well (chronic disability and functional limitation). Coaches and trainers should therefore have an understanding of the most common volleyball-related injuries in order to appreciate the potential impact injuries may have on the both on the athlete and the team.

One of the first considerations in discussing the injuries for which volleyball athletes are at risk is to define what constitutes an injury. One accepted definition used in research is that an injury is any condition for which an athlete seeks medical attention. Injuries so defined may in turn be further subdivided into conditions that result in "time lost" from either competition or training and those that do not limit playing time. The length of time loss (typically reported in days or weeks) therefore provides a measure of injury severity that can be used to compare different types of injury. For example, in their 2004 study chronicling the injuries that occurred during one volleyball season in the Dutch professional league, Verhagen et al determined that shoulder injuries resulted in an average time lost from training or competition of 6.5 weeks – by far the longest mean absence from participation compared to other injury sites documented in their study.

Injuries are also commonly categorized by and compared based upon the body part affected (e.g. shoulder, knee, ankle, lower back). One additional useful classification criterion is whether the athlete was injured as the result of acute tissue overload or whether the injury resulted from chronic overuse. Acute injuries, such as ligament sprains and muscle strains, occur when the limits of tissue distensibility and integrity are suddenly overwhelmed. The athlete is usually able to recall an exact mechanism of injury to correspond to the sudden onset of pain and functional limitation. In contrast, overuse injuries (e.g. tendinopathies) often occur insidiously. As a result the injured athlete often cannot recall a specific traumatic incident or a definite mechanism of injury. A hybrid of these two injury mechanisms occurs when tissue that has been weakened from overuse suddenly fails in response to an acute load. The athlete will identify the moment of "injury", but may not appreciate the impact of the chronic tissue overload that predisposed him (or her) to ultimately develop outright tissue failure.

Numerous studies reporting on injury patterns in volleyball have been published. Unfortunately, differences in the definition of injury and in calculation of incidence rates make it difficult (if not impossible) to directly compare these studies. Nevertheless, it is generally accepted that the most commonly occurring injuries are acute ankle sprains, followed by overuse conditions of the knee (patellar tendinopathy) and shoulder (multidirectional instability, impingement) and the lower back (nonspecific mechanical low back pain).

Acute Injuries – Ankle Sprains

Ankle sprains are clearly the most common volleyball-related injury, accounting for just over half of the acute injuries recorded prospectively by Bahr et al and Verhagen et al. Ankle sprains occur most frequently at the net when one player lands on another player's foot, inverting the ankle and stretching (or tearing) the ligaments on the lateral (outer) aspect of the ankle. Athletes who have suffered an ankle sprain in the past are more likely to suffer a subsequent injury. If the injured player has difficulty accepting weight onto the involved ankle, or if bearing weight results in severe pain, she or he should not continue playing and should seek prompt medical attention.

The goal of initial treatment for ankle sprains (and for acute injuries in general) is to limit internal bleeding and swelling, and to provide an environment conducive to tissue healing. The acronym PRICE is easy to recall and nicely summarizes the early steps in caring for an acute ankle sprain. PRICE stands for:

Protection - Protect the ankle from further immediate injury. Depending on the severity of the sprain, a period of immobilization and restricted weight bearing may be necessary. As the athlete's condition improves, he or she may resume progressively more advanced activity patterns. However, use of an external support (brace, or taping) is generally recommended for the first six months following injury.

Rest - As mentioned, a period of restricted activity promotes early tissue healing. Weight-bearing may resume as symptoms subside, and activity may progress accordingly.

Ice - Application of ice (or other cryotherapy modality) provides analgesia and helps to minimize swelling. Although there is no consensus on treatment parameters, cold treatment is often applied for 20 minutes at a time (followed by 20 minutes without ice). Three such on/off cycles of cryotherapy may be administered in succession several times per day over the first 24 – 48 hours following the injury.

Compression - Temporary compression immediately following the injury limits swelling in the injured ankle, which in turn facilitates restoration of normal range of motion.

Elevation - Elevating the injured ankle also helps to minimize swelling immediately following the injury.

PRICE treatment should be initiated as quickly as possible following the injury (Figure 1). Acute injuries should also be promptly evaluated by a trained medical professional in order to carefully assess the extent and severity of injury, arrange for diagnostic testing as needed in order to arrive at an accurate understanding of the nature and extent of the injury, and formulate a definitive treatment plan. The athlete should be monitored carefully, and examined periodically to confirm that healing is progressing as expected. In addition to range of motion and strengthening exercises, the comprehensive treatment of ankle sprains should include instruction in a program of neuromuscular (proprioceptive) re-education. This involves having the athlete balance on the involved limb, limiting corrective motion to the involved joint to the extent possible (Figure 2). As the athlete improves, these balancing exercises should be made progressively more challenging (both in terms of duration, and in terms of adding unstable surfaces or other challenges to the maintenance of balance). Return to play decisions following an ankle sprain (or indeed any injury) should be guided by functional recovery rather than mere absence of pain. In their 2004 study, Verhagen et al documented that ankle injuries resulted in a mean of 4.5 weeks of time lost from training or competition.

Since ankle injuries are so common among volleyball players and result in considerable time loss, it makes sense to try to prevent them. Primary prevention entails practicing proper footwork at the net, integrating proprioceptive exercises into the athlete's regular conditioning program, and consistent use of external ankle braces. Only recently has there been any evidence for a significant prophylactic effect from the use of semi-rigid external ankle orthoses (Figure 3) among volleyball players. Despite some concern voiced by coaches and athletes alike, there is no evidence in the literature to suggest that the use of ankle orthoses increases the risk of knee injuries. Another means of reducing the risk of ankle sprains would be to modify the existing centerline rule, which allows for a portion of the foot to penetrate onto the opponent's court without a violation. While such rule changes have been discussed, it seems unlikely that any substantive modification of the centerline rule would be possible without significantly altering the dynamic aspects of the sport as it is currently played.

Overuse Injuries – Patellar Tendinopathy

Anterior knee pain represents the second most common diagnosis among volleyball athletes. The most common causes of anterior knee pain among volleyball players are patellofemoral syndrome, and patellar tendinopathy (also known as "jumper's knee"). Both of these diagnoses represent overuse conditions. Fortunately, volleyball players appear to be at relatively low risk for acute knee problems, such as injury to the anterior cruciate ligament. Nevertheless, overuse conditions such as patellar tendinopathy can extract a very high cost in terms of loss of time, and may lead to chronic debilitating symptoms that adversely affect the athlete's quality of life.

Unlike acute injuries, which have a distinct mechanism and time of onset, overuse injuries are insidious in nature. Athletes with overuse injuries generally cannot recall a specific moment when their injury occurred, but report instead a history of activity related discomfort that has become progressively more severe over time. Many athletes attempt to "play through" or compensate for the initial symptoms of overuse pathology, and only after the pain becomes limiting or the performance deficit intolerable will the athlete take time off from training or competition. Consequently, treatment of overuse injuries is often challenging. The first priority is to alter or minimize the load on the injured area. This is generally accomplished through activity modification. Reducing the load on the injured area allows the affected tissues an opportunity to recover and begin healing. However, in order to adequately treat an overuse injury, it is important to examine the athlete's risk factors for injury.

Risk factors for injury (which can be defined as those qualities which increase the likelihood that an athlete will develop a certain type of injury), may be categorized as either "intrinsic" or "extrinsic" to the athlete, and as either "modifiable" or "unmodifiable". Risk factors for jumper's knee include the volume of jumping and jump training which the athlete must endure (*extrinsic, modifiable*), the biomechanics of the knee during the spike approach and upon landing from the jump (*intrinsic, modifiable*), and the composition of the surface on which the athlete trains and competes (*extrinsic, modifiable*). Ferretti and colleagues documented that hard, unforgiving surfaces increase one's risk of developing jumper's knee. Not surprisingly, therefore, jumper's knee is less common among beach volleyball players than it is among indoor volleyball athletes. The amount of knee valgus stress on the lead (usually non-dominant) knee during the spike approach jump is a risk factor for developing patellar tendinopathy, as is the degree of knee flexion achieved during landing from the spike jump. Interestingly, those athletes who had the greatest jumping ability were found to be at the greatest risk for developing patellar tendinopathy. There are undoubtedly other genetic susceptibility factors involved in the pathogenesis of jumper's knee, since not all athletes who undergo comparable jump training programs will develop symptomatic jumper's knee. Practical prevention strategies for jumper's knee include strengthening and conditioning the muscles of thigh, hip, and buttocks so that they can effectively absorb the shock of landing from jump after jump. Analysis of technique is also important, as bending too deeply at the knees when landing from a jump, or excessively «toeing in» during the loading and take off phases of the jump can predispose the athlete to jumper's knee. Perhaps the most effective preventive intervention is simply reducing the load on the knee extensor mechanism by limiting the volume of jumping required during training sessions.

Even with an appreciation of some of the modifiable risk factors for anterior knee pain, effective treatment of jumper's knee often remains elusive, further underscoring the importance of prevention. Some athletes benefit from the use of an infra-patellar strap, which is thought to redistribute the traction force on the patellar tendon during activation of the quadriceps, thereby reducing the risk (or minimizing the symptoms) of tendinopathy. Eccentric quadriceps training (Figure 4, shown without the incline board that can be used to make the exercise more demanding) may be of some benefit as a pre-season conditioning exercise, but this type of exercise has not been shown to be effective in treating symptomatic patellar tendinopathy during the competitive season. Advances in our understanding of the underlying cellular and tissue pathophysiology have led to new methods to treat this condition, which at its worst can be potentially career-threatening. Among these treatments is sclerosis of neovessels under ultrasound guidance, which has been shown to be of some clinical benefit. Other less proven methods of treatment include injections with platelet rich plasma. Although thought to deliver concentrated growth factors and cellular mediators involved in tissue healing direct to the site of tissue injury, there is little scientific proof of the effectiveness this technique. Severe cases of patellar tendinopathy may require surgical intervention.

Overuse Injuries – Shoulder Problems

The shoulder is the third most commonly injured body part overall. Injuries to the shoulder most often occur as the result of chronic overuse. Acute shoulder trauma (such as an anterior shoulder dislocation) does occur, but it often occurs in the context of underlying overuse-related pathology. Spiking is perhaps the most dramatic skill in volleyball. It has been estimated that an elite volleyball player, practicing and competing 16 to 20 hours per week, may perform as many as 40,000 spikes in one season. The volume of overhead loading inherent in that much activity places enormous demands on the glenohumeral joint specifically and the shoulder girdle in general.

The shoulder is an extremely mobile joint that permits the volleyball athlete to swing high for a spike or reach out for a block. Athletic shoulder function is dependent upon the precise action of the rotator cuff and the muscles that stabilize the scapula (shoulder blade). These muscles must be well conditioned and work in a coordinated manner to ensure pain-free shoulder function. Unfortunately, through repetition and the sheer volume of training, the muscles and tendons of the shoulder girdle may become overloaded and fatigued. This is turn may result in "wear and tear" damage to the shoulder, which over time may culminate in a time-loss injury. Regrettably, treatment of overuse conditions of the shoulder girdle (such as rotator cuff tendinopathy) is often incompletely successful. Accepted principles of non-operative treatment include load reduction (limiting the number of spikes or serves performed) and correction of any underlying imbalances of strength or flexibility through appropriate training programs (Figure 5). Some conditions, such as shoulder instability due to injury to the glenoid labrum, may require surgery if conservative management does not restore the athlete to an acceptable level of function.

As with jumper's knee, comprehensive treatment of volleyball-related shoulder problems requires that specific risk factors for injury be identified and addressed. Our understanding of the risk factors for volleyball-related shoulder problems is unfortunately quite limited. Kugler et al (1996) described the adaptive changes in scapular positioning they observed in elite volleyball players, but

there has been little volleyball-specific follow-up to this insightful paper. In their recent study, Reeser et al found that spiking volume (*extrinsic, modifiable*) and scapular dyskinesis (*intrinsic, modifiable*) were associated with an increased incidence of shoulder problems. Shoulder pain was also associated with core instability (*intrinsic, modifiable*), reflecting the importance of the kinetic chain in generating power for the spiking motion. Wang and Cochrane, along with other researchers, have documented the ratio of eccentric shoulder external rotational strength to concentric shoulder internal rotational strength among volleyball players. Their work, collectively, suggests that a reduced ratio represents a risk factor for injury. Wang and Cochrane (2001) also documented that those with a longer training history had a higher incidence of shoulder problems. Lastly, there have been numerous reports in the literature describing the suprascapular mononeuropathy that is common in volleyball players, but the risk factors for the onset of this condition remain a matter of debate. Similarly, treatment for this condition is somewhat controversial, since it frequently is essentially painless and causes little or no performance deficit.

Prevention of shoulder pathology among volleyball athletes has been poorly studied. It is not known whether intervening in any of the aforementioned areas, such as instituting a program of flexibility training to address the deficit of glenohumeral internal rotation commonly observed in the dominant shoulder, will minimize or eliminate the volleyball athlete's risk of developing shoulder pain. Nevertheless, it is probably advisable to incorporate posterior capsular stretching into the shoulder girdle strengthening and scapular stabilization program followed by elite volleyball athletes. Most conditioning programs also include a program of core stabilization exercise designed to promote correct posture and facilitate the generation and efficient transfer of power throughout the kinetic chain.

Low Back Pain

Volleyball players, along with the rest of the general population, frequently complain of lower back pain. More often than not, the pain will resolve spontaneously within several weeks, and as such probably does not indicate serious pathology. However, mechanical back pain is much less common among young athletes, and those individuals 20 years of age or younger who have persistent back pain that limits them from participating in activities (such as volleyball) should be evaluated by a sports medicine physician. There are many different causes for back pain, and as a result the exact cause of an individual's lower back pain often cannot be precisely identified. That said, if a young athlete's low back pain is made worse by lumbar extension (bending backwards), then a stress fracture of the lumbar spine ("spondylolysis") should be ruled out. If the athlete has suffered an acute strain of the muscles of the low back, then the pain will typically be self-limiting and should improve rapidly over a few days. Pain related to an intervertebral disc injury or spinal nerve impingement may be disabling, and should be treated aggressively. Anti-inflammatory medicines such as ibuprofen can help to control symptoms in the short term. Volleyball training (especially jumping and strength training) should be curtailed until the athlete is feeling better. Because of the different types of injury that may give rise to low back pain, it is difficult to give general recommendations for exercises that would be therapeutic in all situations. For this reason, an appropriate exercise prescription should be developed in consultation with a trainer, physical therapist, or sports medicine physician. Prevention of lower back problems includes minimizing torsional stress on the spine, particularly while loaded, as well as minimizing extremes of or repetitive flexion and/or extension - particularly in the young athlete. Proper weight-training technique is an important aspect of a comprehensive injury prevention program, as is an integrated program of core stabilization.

Principles of Injury Prevention

Over the last 20 years, the ability of sports medicine professionals to diagnose and treat athletic injuries has improved dramatically. Athletes are now capable of returning from serious injuries faster than ever before due to aggressive treatment and rehabilitation programs. The greatest remaining challenge in the field of sports medicine is to design and implement programs that will reliably prevent injuries from occurring in the first place. Although injuries cannot be entirely avoided, our present understanding of the basic risk factors associated with the most common volleyball-related injuries can help coaches and athletes prepare themselves and their teams for a successful season with minimal risk of injury. Several general strategies that can be adopted in an effort to reduce an athlete's risk of volleyball-related injury are presented below. Although certainly not exhaustive, the principles briefly outlined form the foundation of a sound volleyball injury prevention program.

1. Follow a sport-specific program of strength training and conditioning.

Volleyball is primarily an anaerobic sport. Nevertheless, volleyball athletes should maintain good cardiovascular fitness as it will enhance their ability to recover between points and after matches. Elite volleyball players also train to become strong and powerful, not only for the performance advantage offered but because well-conditioned muscles are better able to endure the

demands of sport participation, and are less likely to become injured. In addition, fitness allows the athlete to maintain optimal form and technique throughout a match, thereby minimizing the risk of fatigue-related injuries. Warm-up prior to and proper cool-down following a competition readies the athlete for the demands of the event and facilitates subsequent recovery.

2. Avoid overtraining.

Adequate rest is almost as important to an athlete's development and performance as proper training. Athletes who train too hard may not give their bodies sufficient time to recover, resulting in an increased risk of overuse injuries. Each athlete has a unique tolerance for training and individual needs for rest and recovery, making it difficult for a coach to take a "cook book" approach to training for all members of the team. Athletes who persistently train without sufficient rest are at risk for developing a syndrome of mental and physical fatigue commonly referred to as "burnout". Elite athletes train for volleyball throughout the year, but vary the intensity and composition of their workouts so that they achieve and maintain peak fitness during the competition season. There is evidence that this practice, known as periodization, further reduces an athlete's risk of injury.

3. Pay attention to and practice proper technique.

As we have seen, most ankle sprains occur when an athlete lands on a teammate's or opponent's foot while making a play at the net. Practicing good blocking footwork and controlled spike jump approaches and landings can minimize the likelihood of contact-related injuries about the centerline. It is also important to attend to technique, since subtle alterations in performance and technique often provide the earliest clues that an athlete is developing (and attempting to compensate for) overuse related dysfunction.

4. Train (and maintain) core stability.

To function properly, joints (and in fact the body as a whole) must be mechanically stable. Stability is conferred through both passive and active mechanisms: the musculoskeletal anatomy provides the joint with an underlying passive structural stability which is augmented through dynamic (active) neuromuscular control. Such control can be learned, and indeed is an essential component of the athlete's ability to adapt to the demands of and excel in their chosen sport. When actively engaged in sports, athletes are rarely static - their position in space is constantly changing as they react to the competitive situation. In volleyball, although most of the activity is initiated by the legs, the culmination of a given movement often involves the upper limbs reaching overhead. Thus, even though the skill may be performed by the upper body, the energy to perform those skills is generated by the lower limbs and by the trunk. The smooth and efficient transfer of energy from lower limb to upper limb is dependent on an integrated response from the intervening segments of the "kinetic chain" - particularly the pelvis and the thoracolumbar spine.

Together the pelvis and the thoracolumbar spine form the foundation of what has become known as the athletic "core." Research has demonstrated that a stable, well-conditioned core plays a critical role in coordinating the body's movements and in minimizing the athlete's risk of both upper and lower limb injuries, as well as low back pain. The core may therefore be thought of as a functional integration of the associated anatomical structures of the pelvis and thoracolumbar spine, including the hip flexors, hip extensors, hip abductors and adductors, abdominals, paravertebral musclature, and the diaphragm. Developing and maintaining the athlete's dynamic core strength and stability will reduce his or her global risk of injury by facilitating proper coordination and energy transfer along the kinetic chain. Suggested exercises are presented in Figure 6.

5. Properly rehabilitate injuries.

Research has shown that a body part, once injured, is more likely to be injured again upon returning to play. To prevent acute injuries from becoming chronic recurrent injuries, it is imperative that the injured athlete receive careful evaluation from a sports medicine provider, so that an accurate diagnosis can be made and a comprehensive treatment program started. Typically the athlete will be allowed to return to competition once they can perform sport-specific skills such as jumping and spiking - without pain. However, a truly thorough program will rehabilitate the athlete "beyond the absence of symptoms". This philosophy requires that the athlete's trainer, therapist, or team physician identify and address any structural and/or functional factors that contributed to (or resulted from) the injury. For example, an athlete with a stress fracture of the lower back may develop inflexibility of the hamstrings and subconsciously alter his or her spiking form so as to minimize stress on the lower back. Unless these factors are identified and corrected during the rehabilitation process, the athlete may subsequently develop shoulder pain as a consequence of the altered mechanics.

6. Maintain proper nutrition and hydration.

Consuming a balanced diet with adequate caloric intake ensures that the athlete will have sufficient energy stores to allow full participation throughout the season. Dietary protein intake provides the building blocks to repair injured tissues, while fats and carbohydrates serve as fuel for the athlete's fire. Sufficient fluid intake (preferably water or - during competition - a sport's drink) prevents dehydration and minimizes the risk of developing heat illness. Coaches should be particularly attentive for recurrent injury among female athletes, as this may indicate the presence of the "female athlete triad" a condition characterized by disordered eating (typically anorexia), which in turn leads to irregular or even absent menstrual cycles (amenorrhea), and eventually to loss of bone mass (osteoporosis).

7. Avoid early sport and position specialization.

Volleyball is a sport that can be enjoyed by the young and old alike. However, engaging young athletes in overly structured, competitive programs may increase their risk of injury. The American Academy of Pediatrics Committee on Sports Medicine and Fitness has discouraged "specialization in a single sport before adolescence", and it seems reasonable to conclude that the volume of training in developing athletes should be limited in order to reduce the risk of developing overuse injuries. Unfortunately, no studies have been done to quantify what represents an appropriate training load for the young volleyball athlete. Athletes, coaches, and parents must therefore be particularly attentive to the early warning signs of overuse injury, including activity-related pain and deteriorating performance.

A Final Thought

It has been stated that great success comes from great collaboration. It seems reasonable to extrapolate on that theme and suggest that the modern international volleyball player may potentially benefit from the input of a myriad of professionals spanning the entire sports medicine spectrum, including biomechanists, nutritionists, physiologists, physiotherapists, and physicians. Of course, one must include the coach (trainer) in that list, since it is the coach who must decide how to best train the athlete and who ultimately implements the advice of the medical professionals regarding return to play following injury. In that regard, it should be acknowledged that on occasion the coach and the medical team may be at odds regarding their motivation. In the long run, however, it is the athlete's health and well being that should serve as the principle motivation behind all recommendations offered by the sports medicine team, in addition to serving as the deciding factor in all related decision-making.

For additional information on volleyball sports medicine and science, the interested reader is referred to "Volleyball" (part of the Blackwell Olympic Handbook of Sports Medicine and Science series) edited by Reeser and Bahr.

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Figure 1. PRICE therapy for acute injuries
PRICE therapy should be initiated as quickly as possible after an acute injury occurs. In this example, the athlete has suffered an ankle sprain. Cold therapy (1A, 1B) is applied over the area of suspected tissue injury, and a compression wrap applied (1C, 1D). Thereafter, the athlete elevates the affected limb to minimize swelling (1E) and protects the ankle from further trauma by limiting weight bearing (1F) until he can be evaluated by a sports physician.

1A

1B

1C

1D

1E

1F

Figure 2. Ankle proprioceptive (neuromuscular) training

Proprioceptive training is an essential component of rehabilitating ankle sprain injuries. Initially the injured athlete should balance on one leg at a time on a stable surface. Corrections to balance should be made at the ankle. As the athlete improves, the exercise may be made more difficult by performing it on an unstable surface, or by closing the eyes, or by attempting to perturb the athlete's balance by throwing a ball to him.

Figure 4. Knee program

As an overuse injury, anterior knee pain may often prove refractory to treatment. Eccentric training of the muscles of the thigh and buttocks may provide some measure of protection. In the exercise shown, the athlete is balancing on one leg with the knee slightly bent. Balance correction should be made at the knee. Initially the exercise should be performed on a stable surface, but can be made more difficult by introducing an unstable surface, or by attempting to perturb the athlete's balance.

Figure 3. A semi-rigid external ankle orthosis

Reusable ankle orthoses such as the one pictured below represent an important component of preventing re-injury following an initial ankle sprain. Current recommendations are that a brace should be worn for six months following an ankle sprain. Recent research has provided indirect evidence that ankle braces may provide some primary injury prevention benefit if worn regularly.

Figure 5. Shoulder injury prevention

The scapula is the focal point of our current thinking on overuse injuries of the shoulder girdle. The kinetic energy generated by the lower limbs and trunk is funneled through the "shoulder blade" out to the upper limb. In an effort to adapt to repeated loading, over time the dominant scapula frequently becomes malpositioned, thereby compromising the stable base of athletic shoulder function and predisposing the athlete to injury. Therefore, it is important that the overhead athlete follow a program of scapular stabilization exercises in addition to a rotator cuff conditioning program.

Shoulder

5A. The following exercises can not only be used to identify scapular dyskinesis, but also to train scapular control.

Low load test for scapular stability

The athlete is positioned on all four extremities as shown. The athlete attempts to hold the scapula stable while rocking forwards and backwards, as well as from side to side. Look for asymmetry in scapular motion.

Side bridge as a test of dynamic scapular stability

The athlete lies on his side, supported by his elbow, and attempts to hold his shoulder, hip, knee and ankle in line (i.e. maintain a stable core) while lifting his body off of the floor. "Winging" of the scapula is evidence of poor scapular control.

Wall press test for scapular stability

The feet are pressed against a wall. The lumbar spine must be kept in neutral. Bend one knee and flex the hip to 120 degrees, then extend the hip 15 degrees. The feet can be positioned at various heights on the wall in order to make the exercise more demanding. Progression is pictured from upper left to lower right.

Shoulder

5B. Coordinated motor activity, along with adequate strength and endurance, are essential to optimal shoulder function. The following exercises should be performed daily for optimal effect.

Rotator cuff strengthening exercises

The athlete remains standing, maintaining core stability while performing external (top) and internal (bottom) shoulder rotation exercises using an elastic resistance band. The scapula should be held stable and the humeral head kept from gliding anterior, while the elbow should remain in the plane of the scapula.

Training the trapezius and the opposite serratus anterior

In the standing position the athlete secures a rubber band around one foot and holds the other end in the opposite hand. In the figure, by elevating his right shoulder he is activating the upper part of the right trapezius muscle. When further flexing the right upper limb posterior, he is training the middle and lower parts of trapezius. At the same time the left arm and shoulder can grab the rubber band push forward, activating the left serratus anterior muscle. During these exercises, thoracic extension can also be trained by lifting the sternum. The lumbar spine must be kept stable.

Training the serratus anterior and trapezius muscles

The athlete supports himself on one elbow/forearm while maintaining core and scapular stability. He holds his opposite arm in 90 degrees of flexion/abduction while rotating his body and reaching as far as possible. The exercise can be progressed by using weights.

Training scapular coordination with a fit-ball

The athlete balances a fit-ball on one outstretched hand while changing position of the arm into flexion/extension and abduction/adduction. Exercise should be performed for three minutes.

5C. Thoracic spine mobility and shoulder girdle flexibility are important but often overlooked aspect of upper limb function. The following exercises address this aspect of shoulder injury prevention.

	**Training thoracic extension I** Athlete standing with his elbows against a wall with his hands placed around a segment of the thoracic spine, extending the thoracic spine while keeping the lower back stable.
	**Training thoracic extension II** The athlete is lays supine on a fit-ball with his arms extended over his head. By rocking back and forth, the thoracic spine is mobilized in passive extension.
	**Training thoracic extension III** The athlete sits on a chair, and leans backwards over the back of the chair mobilizing the thoracic spine into extension.
	**Stretching the posterior capsule and external rotators** The athlete lays on his side with his dependent arm in 90 degrees of flexion. The “free” arm presses the dependent humeral head posterior and inwardly (medial) rotates the arm at the same time. The stretch should be held for 40 s, and performed bilaterally.
	**Stretching the latissimus dorsi, the rhomboid, and other medial rotators** The athlete stands in a corner while performing a wall-slide. By elevating the arms while keeping the scapula stable and not allowing any inward rotation of the arms, the muscles are stretched. Each position should be held for 40 s.
	**Stretching the pectoralis minor muscle** The athlete stands in a doorway with one arm in 180 degrees of flexion and his elbow against the door-frame, leaning his body forward to stretch the pectoralis minor muscle. Each position should be held for 40 s, and performed bilaterally.

Figure 6. Training the core.

The following exercises are all designed to train the "athletic core". Exercise progressions are noted.

The "core"

6A. Exercises to train pelvic control

	**Pelvic tilt** Starting position: Supine on the floor with hips and knees bent. Execution: Tighten the abdominal muscles so that the lower back touches the floor (tilting the pelvis posterior), then tighten the muscles necessary to tilt or rock the pelvis forward (this will curve the lower back and lift it off the floor). Please note: Performed correctly, the athlete will produce a back and forth tilting motion of the pelvis.
	**Sideways pelvic tilt** Starting position: Supine on the floor with the legs straight. Execution: First pull the iliac crest on one side upward, and then the other side. Note: The athlete will tilt the pelvis from one side to another.
	**Pelvic rocking in the standing position** Starting position: Standing. Execution: Tighten the abdominal muscles in order to rock the pelvis forward, then activate the muscles in the back to rock the pelvis in the reverse direction (this will result in an exaggerated lumbar lordosis). Note: The athlete should produce a repetitive rocking motion of the pelvis
	**Sideways pelvic rocking** Starting position: Standing. Execution: First pull the iliac crest on one side upward, and then the other side. Note: The athlete will tilt the pelvis from one side to another.

6B. Core stabilization progressions

	**Quadruped - stability with knee and hand support** Starting position: Standing on all fours, supporting the body on knees and hands. Execution: Maintain position for up to 45 seconds. Progress by supporting the body on knees and elbows. Note: Discontinue exercise when "tremors" or deviation from mid-position occur.
	**Diagonals** Starting position: Standing on all fours. Execution: Alternately elevate one upper limb while extending the opposite lower limb, then extend the arm and leg diagonally to a horizontal position. Hold each position for up to 45 seconds, then repeat on the opposite side.
	**The plank - stability with foot and elbow support** Starting position: Standing on all fours, supporting the body on toes and elbows. Execution: Maintain position for up to 45 seconds. Note: Discontinue exercise when "tremors" or deviation from mid-position occur.
	**Stable plank with rotational element - foot and elbow support** Starting position: Standing on all fours, supporting body on feet and elbows Execution: Slowly move one leg out to the side and back (serial hip abduction and adduction, 10 seconds per cycle) for up to 40 seconds on each side. Note: Discontinue exercise when "tremors" or deviation from mid-position occur.
	**The plank - unstable platform/foot and elbow support** Starting position: Standing on all fours, supporting the body on feet and elbows. Feet and elbows should rest on balance disks. Execution: Maintain position for up to 45 seconds. Note: Discontinue exercise when "tremors" or deviation from mid-position occur.

The plank – unstable platform/upper limb rotation

Starting position: Standing on all fours, supporting the body on feet and elbows. Hands and feet supported on balance disks.
Execution: Reach out one arm to the side (abduct and flex) and return, then switch to the other side. 10 second cycles on each side. Maintain position and perform up to 4 cycles per side.
Note: Discontinue exercise when "tremors" or deviation from mid-position occur.

The plank – unstable platform/lower limb rotation

Starting position: Standing on all fours supporting body on feet and elbows. Arms supported on balance disks.
Execution: Cyclically abduct and adduct each lower limb at the hip while maintaining stable core position. Perform up to 4x10 second cycles on each side
Note: Discontinue exercise when "tremors" or deviation from mid-position occur.

Support on one arm, sideways

Starting position: Lie on side with legs straight and support the body on a straight arm. Place the opposite hand on the hip. Place one foot slightly in front of the other.
Execution: Keep the body straight and the back in the mid-position for up to 45 seconds.
Note: Discontinue exercise when "tremors" or deviation from mid-position occur
Progression: Place the feet on top of one another. Same exercise as above.

"Wheelbarrow"

Starting position: Athlete assumes the same starting position as for push-ups. Assistant grabs athlete's ankles and lifts. Throughout the execution of the exercise the athlete maintains the same hand position.
Execution: Assistant pushes the athlete gently forward (away) and then pulls the athlete gently back (towards the assistant). The athlete maintains the same curvature of the back and the same position of the hands for up to 45 seconds.
Note: Discontinue exercise when "tremors" or deviation from mid-position occur.

Body lift with shoulder support

Starting position: Supine on the floor with arms to the side. Assistant is one step from the athlete's feet. Assistant holds on to athlete's ankles and lifts them to hip height.
Execution: Lift buttocks in order to maintain a "stable core" in neutral. Only the shoulders, neck, head, and arms should contact the floor. The assistant releases one leg, which the athlete then cyclically abducts and adducts while maintaining lumbar stability. Perform up to 4x10 second cycles on each side.
Note: Discontinue exercise when "tremors" or deviation from mid-position occur.

6C. Dynamic exercises to build core strength (power) and endurance.
Performing the concentric phase of the exercise as explosively as possible will help to generate power. To increase power we recommend performing 3-5 sets of 10 explosive repetitions. To improve muscular endurance the athlete may opt to work less explosively with more repetitions in each series. The execution of the exercises should be pain free.

	**Buttock lift** Starting position: Supine on the floor with hips and knees bent at 90 degrees. Hands behind head. Execution: Lift knees toward the ceiling, thereby lifting the buttocks off the floor. Note: Pulling the thighs towards the chest makes the exercise easier.
	**Sit-ups, oblique abdominal muscles, unstable** Starting position: Lying partly on one side, with one buttock on the floor and the pelvis slightly rotated and the hip and knees slightly bent as shown. The torso is rotated slightly in the dame direction as the pelvis. Execution: Elevate the torso as in sit-ups, rotating the upper body away from the lower body. Alternate sides.
	**Oblique abdominal muscles, from below** Starting position: Supine on the floor, with hips flexed to 90 degrees and knees slightly bent. Legs together. Arms to the side. Execution: Lower legs diagonally to floor and back. Maintain mid-position in lower back! Repeat exercise on other side.
	**Sit-ups with fixed foot position and rotation** Starting position: Supine on the floor with hips and knees flexed as shown. Arms across chest. Feet on floor. Assistant holds athlete's ankles. Execution: Lift torso towards thighs, while rotating the torso to direct the elbow to the opposite thigh. Alternate sides.
	**Throwing sit-ups** Starting position: Supine on the floor. Assistant stands approx. 1.5 m from the athlete's feet, holding a medicine ball. Execution: Assistant tosses medicine ball towards athlete's chest. Athlete initiates sit-up motion towards ball, and catches it right before it reaches the chest, then throws the ball back to the assistant while completing the sit up. Return to the supine position before repeating.

Sideways throwing

Starting position: Sitting approximately 1 m from the assistant, who is positioned off to one side. Hips and knees slightly bent. Thighs and calves should not touch the floor. Holding a medicine ball.
Execution: Throw the medicine ball sideways to assistant. Exercise is to be executed explosively.

Maximal throwing

Starting position: Stand facing a wall, knees slightly bent, holding medicine ball overhead.
Execution: The athlete extends the knees with an explosive motion as he throws the medicine ball against the wall.
Note: Lean forward with the lower back in mid-position.