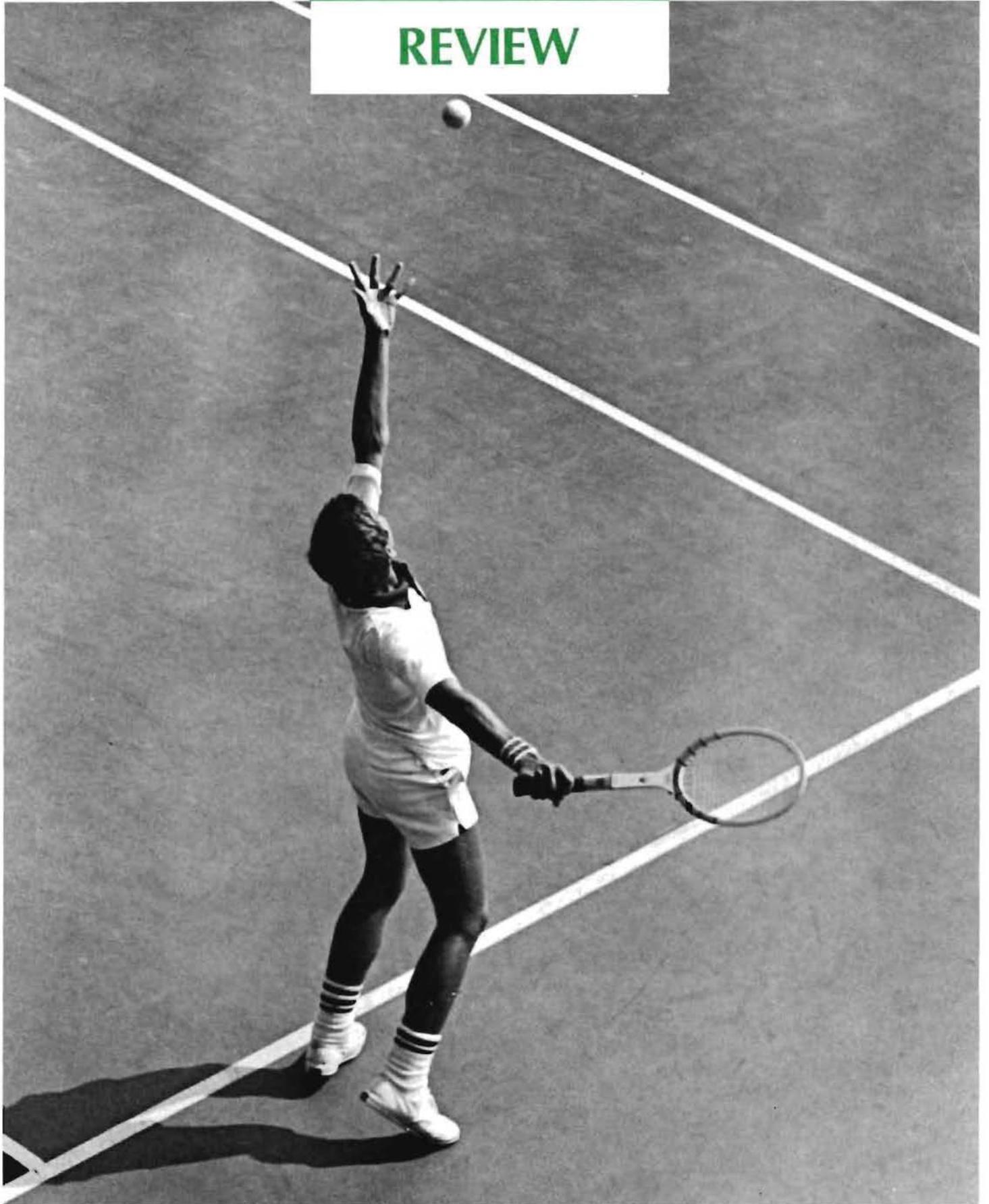


Kalamazoo
College

REVIEW

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CONTENTS

Kalamazoo College: Unique in Tennis . . .	1
Living with Tennis	6
<i>—George H. Acker</i>	
The USLTA at Stowe	8
The USLTA and the Junior Tennis Program	10
<i>—Rolla L. Anderson</i>	
A Pro, an Alumnus, a Trustee	13
Contemplations of a Coach	14
<i>—Tish Loveless</i>	
MIAA Champions	17
The Two-Handed Tennis Strokes	18
<i>—Ronald A. Cook '74</i>	
The Tennis Serve: A Film Analysis	21
<i>—Rosemary Luther DeHoog '60</i>	

Kalamazoo College: Unique in Tennis

The game Mary Outerbridge brought to this country from Bermuda in 1874 has a long tradition at Kalamazoo College, beginning before the turn of the century. In this 100th anniversary year of tennis, the College takes a look at its own unique place, particularly in the last thirty years.

It was in 1943 that tennis in Kalamazoo first came onto the national scene, when the National Junior and Boys' 16 Championships were staged on the College courts. Facilities then were near the

Pennsylvania railroad tracks, adjacent to Tredway Gymnasium. Both players and spectators complained about the disturbance of the trains, and after three years of interrupted concentration, the USLTA officials offered the College a five-year contract for the Championships, on the condition that the College would furnish new courts and facilities.

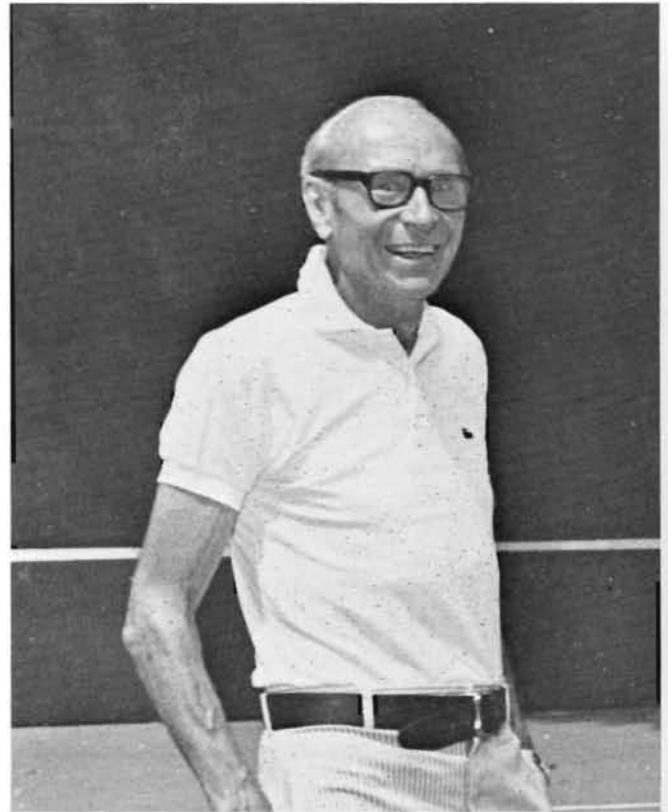
The original projection was to have seven courts along West Main Street, with two to the south,



Stowe Stadium at Kalamazoo College in a photo taken during the 1974 National Junior and Boys' 16 Championships.



This is an early photo of Dr. Allen B. Stowe, right, after whom the tennis stadium is named, and Marion (Buck) Shane '40, now president of Mercyhurst College, Erie, Pa., who is considered one of the fine players in varsity tennis history at Kalamazoo College.



Frederick C. Fischer, enthusiastic supporter of tennis in Kalamazoo and at Kalamazoo College. Mr. Fischer, retired executive vice president and secretary-treasurer of Allied Paper Company, is an honorary trustee of the College.



The tennis fieldhouse at Kalamazoo College, located adjacent to Tredway Gymnasium.

forming a natural stadium. By the time the stadium was dedicated on August 3, 1946, there were courts in combination of six and three, and permanent seating for 1500 spectators arranged at a ten-foot level to permit best visibility of the players. Named for Dr. Allen B. Stowe, who served with distinction both as professor of chemistry and tennis coach at the College until his untimely death in 1957, the stadium represented his enthusiasm on behalf of tennis for Kalamazoo.

The chairman of the Junior Tennis Development Committee of the USLTA, William M. Tobin, wrote to then College President Paul L. Thompson: "... We wish to congratulate you on the new tennis stadium and the speed with which it was completed. It is a most excellent plant and complete in every detail. So far as I know, with the possible exception of Forest Hills, there is no tennis setup that can compare with it."

Stowe Stadium is a pride of Kalamazoo as well as Kalamazoo College and even before the plans for its construction were announced, the \$50,000 needed had been raised. The funding project for it became a community one. Fred Fischer, who has supported tennis in numerous ways through the years, was

chairman of the funding committee. Again in 1960, Mr. Fischer was instrumental in providing funds—this time for two indoor courts adjacent to Tredway Gymnasium. The tennis fieldhouse was the first indoor tennis facility in Michigan. This past summer, during the National Championships, the community chose to honor both Fred and Wildie Fischer for their strong interest in and support of the great game of tennis.

The red clay of Stowe Stadium was replaced with the fibrous asphalt base Laykold, and lights were installed for the three main courts in 1964 (the year Stan Smith won the Juniors title). In addition, the locker and shower facilities were remodeled and the pro shop was relocated.

What of the Stowe Stadium varsity teams? With Allen Stowe at the helm from the early 30's and George Acker carrying on since 1957, the men's varsity team has one of the more spectacular records in the history of intercollegiate tennis—232 league dual meet victories in 233 starts; 35 undisputed conference titles and one co-championship in the last 36 seasons alone. And the women's varsity team in its twenty-one years of full-fledged intercollegiate competition under the coaching of Tish Loveless, has won seventeen conference championships.

The men's varsity tennis coach, George Acker, and his family were honored as 1974 United States Lawn Tennis Family of the Year during the recent U.S. Open Championships at Forest Hills, N.Y. The four Acker girls hold many championships: Sherry, 15, holds four national championships; she and Judy, 17, were undefeated this year in Junior Wightman Cup doubles; Gigi, the youngest at 13, won the feed-in singles in the Western Tennis Association's 14's this summer; Cindy, 16, will co-captain one of Kalamazoo's male varsity high school teams this fall.

Rolla Anderson, director of athletics, has held numerous posts within the USLTA structure and has directed the National Junior and Boys' 16 Championships since 1957.

The USLTA Women's Collegiate Championships came to Stowe Stadium this spring under the direction of Tish Loveless. This was the first year of a two-year tournament contract and drew a record of 143 singles entries. And Kalamazoo tennis followers well remember 1968 when Kalamazoo won the National City Girls' Tournament under the tutelage of Dr. Bert Hodgman, for years a dedicated tennis coach for young women and girls in the city.

Today, with 20 indoor and over 50 outdoor courts of tournament quality plus many more in city parks and playgrounds, Kalamazoo's tennis tradition and enthusiasm—at the College and in the city—continue to play a key role in the development of many of the nation's top players.



Dr. Bert H. Hodgman and Joe Brogger watch National Junior and Boys' 16 Championships. Both have been leaders in Kalamazoo tennis efforts. Now a resident of Hilton Head, Dr. Hodgman for many years personally directed a program for girls in Kalamazoo. His daughter, Sue Hodgman Anawalt and her partner, Sue Metzger Tulley, were ranked #1 in 18 and under doubles. Kelee Brogger and her partner, Sally Hanselman, are 1974 winners of the State High School Doubles Championship in Michigan.



Patti Miller Hodgman and Kathy Dombos Schlukebir, both members of the class of 1972, team up in the 1969 USLTA Women's National Collegiate Championships at the Longwood Cricket Club in Brookline, Mass. They reached the semi-finals in that tournament. Another alumna, Karla Lutz Atkinson, class of 1966, won the Middle States Tournament while a student at the College. All three continue to live in Kalamazoo and are active in junior development and other programs. All three were products of the Hodgman tennis program.

Women's Tournaments in the Michigan Intercollegiate Athletic Association (MIAA) have been in existence only over the last twenty-one years, and singles champions from Kalamazoo College have included Audrey Braun Teeter '57, now of Ann Arbor; Rosemary Luther DeHoog '60, Baldwinsville, N.Y.; Sue Diller Craig '64, Jacksonville, Fla.; Karla Lutz Atkinson '66, Kalamazoo; Mary Stratton '68, Detroit; Kathy Dombos Schlukebir '72, Kalamazoo; Patti Miller Hodgman '72, Kalamazoo; Karen Quakenbush '74, St. Louis, Mo.; and Marge Snyder '75 of Evergreen, Colorado. This list represents singles winners for all but seven of the twenty-one years; the team championship was actually won by Kalamazoo College in all but four years—1954, 1955, 1964 and 1967. Joining the above in winning MIAA doubles championships were Mimi Johnson Kibbey '59, Detroit; Ann Wagner Inderbitzin '60, Silver Spring, Md.; Mary Foree '60, Farmington, Conn.; Lynne Emmons Hudson '62, Livonia; Joenne Dipple Green '62, Kalamazoo; Deanna Clair Young '62, Waterloo, Ontario, Canada; Adrienne Hartl Alexander '63, Olympia, Wash.; Sue Dasher '65, Woodacre, Calif.; Tina Roose '66, Ft. Lauderdale, Fla.; Nancy Southard Young '67, Highland Park, N.J.; Mary Westerville Karpel '67, Kalamazoo; Barb Veenhoven '70, Stuttgart, Germany; and Polly Yocum '74, Ann Arbor.



Esther DeWater Abbott '16 is photographed last summer at her Hollywood, Calif., home with tennis awards from student days. Women's tennis, from 1896 through 1925, was a regular part of the MIAA Field Day, and women as well as men competed in calculating total points for the conference tennis championship. Claire Wight Payne '16 of Elma, N.Y., won four gold medals for singles at MIAA Field Days and teamed with Esther Abbott to win doubles twice. Men's varsity players who were outstanding competitors in the early 1900's were Louis Thompson '14 of Tryon, N.C., and the late Dave Polasky '15 from Detroit. They were MIAA doubles champions in 1912 and 1913.



The 1956 men's tennis team at Kalamazoo College is pictured with Dr. Allen B. Stowe, studying the route for their spring southern tour. Front row, left to right—with current tennis activity noted—are Chuck Nisbet, Olympia, Wash.; Les Dodson, Kalamazoo (director, YMCA Junior Development Program); Dean Pinchoff, Flint (head tennis pro, Genesee Valley Tennis Club); Fred Tivin, Cincinnati, Ohio; and Dr. Stowe. Second row, left to right, Mike Beal, Mt. Clemens; Jurgen Diekmann, Hockessin, Del.; Bob Yuell, East Brunswick, N.J.; Jim Fowler, Flint (athletic director and chief counselor, Flint Northern High School and manager and tennis pro, Flint Swim and Racquet Club); Dave Moran, Hanover, Mass. (owner, Boston Tennis Court Construction Co.); Dave Spieler, Adrian; Bob Brice, Dallas, Tex.; and Don Stowe, Kalamazoo. Among other varsity alumni currently involved in tennis are John Trump '68, Mt. Clemens (head tennis pro at Wimbledon Tennis Club, St. Clair Shores); Bill Japinga '60, Lake Bluff, Ill. (head tennis pro, The Racquet Club, Lake Bluff); Bill Bos '50, Dallas, Texas (tennis pro, Dallas Country Club); Dick Johnson '66, Rockford, Ill. (manager and tennis pro, Rockford Indoor Tennis Club); Tom Thomson '73, Lake Bluff, Ill. (manager and pro, The Racquet Club, Lake Bluff); and Bob Braithwaite '43, Lighthouse Point, Fla.; Art Leighton '50, Deerfield, Ill.; and Kirk Andrews '72, Toronto, Ontario, Canada; the latter three are in sales positions with tennis equipment companies. Two former athletes, though in sports other than tennis—Paul Coash '57 and Bob McLean '63—have construction underway for Western Hills Tennis Club in Kalamazoo.

Jack Sunderland '50, now of North Tonawanda, N.Y., held the MIAA singles championship for four consecutive years (1947-48-49-50) as play resumed after the World War II recess. The long string of winners began in 1936 with Harold Simpson '37, Adrian, Mich., as singles champion. Others holding the title, in addition to Simpson and Sunderland, have included Buck Shane '40 of Erie, Pa.; Bill Culver '42 of Kalamazoo; Art Leighton '50, Deerfield, Ill.; Vic Braden '51 of Palm Desert, Calif.; Dick Cain '52, Stone Mountain, Ga.; Bob Casler '55, Tokyo, Japan; Jim Fowler '57, Flint; Jurgen Diekmann '56, Hockessin, Del.; Les Dodson '58, Kalamazoo; Bill Japinga '60, Lake Bluff, Ill.; Loren Campbell '63, Ann Arbor; Dick Johnson '66, Rockford, Ill.; Bill Jones '67, Grand Rapids; Bill Washburn '73, Evanston, Ill.; John Trump '68, Mt. Clemens; John Brummet '71, Chapel Hill, N.C.; and Alex Dalrymple '76, Port Huron. Joining these teammates in MIAA doubles championships were Ed Born '38, Muskegon; Don Worth '40, Kalamazoo; Eric Pratt '42, Galesburg; John Thompson '46, Kalamazoo; Nick Beresky '48, Toledo, Ohio; Martin Martin '50, South Orange, N.J.; Tom Willson '52, Brevard, N.C.; Dean Pinchoff '57, Grand Blanc; Dave Moran '56, Hanover, Mass.; Bob Brice '59, Dallas, Texas; Phil Rose '63, Denver, Colo.; Jim Harkema '64, Jenison; George Smillie '66, Ann Arbor; John Koch '67, Kalamazoo; Bill Struck '70, East Lansing; Burt Bothell '70, Kalamazoo; Dave Emig '75, Muskegon; and Rick Moore '76, Lapeer. Early Kalamazoo College varsity tennis winners were the late James Henry '00, Dave Polasky '15, Leland Hall '23; and Louis Thompson '14 of Tryon, N.C.; Emil Pinel '21, Orlando, Fla.; Ray Gibson '33, Bradenton, Fla.; and Urban Moss '34, Baltimore, Md.

Living with Tennis

By GEORGE H. ACKER

George H. Acker is associate professor of physical education and men's tennis coach at Kalamazoo College. He joined the faculty in Kalamazoo in 1959. He is a graduate of Northern Illinois University, where he was the #1 singles varsity player. He is a member of the USLTA Junior Championships Committee and clinic director of the Western Michigan Tennis Association. He has directed many tennis clinics and city of Kalamazoo tennis recreational programs.

The year 1973-74 was an especially memorable one for the Acker family. We were in Little Rock, Arkansas, when we received the first phone call telling us that we had been chosen Western Tennis Association Family of the Year. Later, in February of 1974, the USLTA committee chose us USLTA Family of the Year. Both honors we still can scarcely believe possible.

We left Arkansas late Saturday afternoon and drove all night in order to arrive in Kalamazoo in time for the National finals and the Family of the Year presentation. As we covered the miles that summer night, we had a chance to reflect on the experiences of our years with tennis.

These honors could not have been achieved without the efforts of many. Kalamazoo College has been the prime moving force since I joined the faculty and coaching staff here fifteen years ago, while an emphasis on tennis both on the campus and in the community created an atmosphere which helped lead to our accomplishments. I am grateful for the cooperation we have received from the College administration, the varsity tennis team, and the many College friends who have given their support and encouragement to our family over the

years. And the influence exerted by having the National Junior and Boys'16 Championships and other tennis events here in Kalamazoo continues to be important in exposing our family to a high level of tennis competition.

I consider my wife, Nancy, as my assistant coach. Although she had very little knowledge of the sport of tennis when we met, she eagerly learned over the years and has developed a competent social game. Our family success would not be possible without her and her willingness to use her time to drive to tennis tournaments and to practice sessions, to keep the tennis clothes clean, and to give encouragement to the girls.

We have four girls who are not only athletically capable but who are able to achieve academically as well. Our oldest daughter, Judy, graduated from high school in June as a straight "A" student and was chosen by members of the boys' varsity tennis team as its most valuable player for three consecutive years. As she joins the student body at the University of Florida this fall, she leaves behind a challenge for her three younger sisters.

Our daughters realize that to be tops in tennis, one must sacrifice a great deal and concentrate only on that one sport. They have not yet reached that point, however, and, if they ever do, the decision will be theirs. Right now they are involved in many other extracurricular activities at the junior and senior high school levels. During the past year their activities included cheerleading, basketball, and track and field. Cindy was the high scorer for Central High School's girls' basketball team as was Sherry for her junior high school. Sherry and Gigi



The Acker family, 1974 Tennis Family of the Year: daughters Gigi, Sherry, Cindy, and Judy with Nancy and George.

helped the junior high school track team win the city championship.

As our daughters have developed athletic skills over the years, I have always tried to stress good manners on the court and acceptable behavior at tournaments. Above winning, I am most concerned with the conduct of the participants. I find myself quickly forgetting who won or lost in tournament matches, but I always remember the court manners and respectfulness of the great players.

Our tennis background began with table tennis, and we spent many recreation hours playing in the basement. Most of the girls were so small that they could not play the ball on the table tennis surface, so they would allow the ball to hit the floor and then attempt to stroke it up over the net. There were always paddle tennis paddles, table tennis rackets, and tennis rackets around the house for the girls to swing, and many of our tennis players on the College team spent time at the house and would be constantly encouraging the girls to compete.

As they grew older, the girls had me paint a small tennis court on the garage floor. Here they had many enjoyable hours playing paddle tennis over an old makeshift net. When there was no one to play with, they would play wall tennis off the side of the garage which was marked for the height of a tennis net. Nancy and I would constantly hear throughout the house the thump-thump-thump that nearly drove us out of our minds.

Sherry, our third daughter, began playing competitive tennis at the earliest age, seven. Her first two years in the state tournament were not at all

successful as she usually drew a seeded player. This did not seem to discourage her, and she constantly made new friends who kept her interest in the game high. At the age of nine, she went to the finals of the girls' 12 and under, only to lose to her older sister, Judy. That was a traumatic experience—and a long ride home from the state tournament. Looking back, I feel confident that it helped to draw the girls closer together.

From the twenty years' experience I have had teaching tennis, I believe that an individual is able to profit from tennis instruction when he shows a readiness for it. This involves hand-eye coordination, concentration, and the ability to practice for a period of a half hour or an hour. In several questionnaires I have given to the participants in the National Junior Tennis Championships, the players reported that their parents were the prime factors for their being there in the tournament. To learn that these participants considered their parents to be the best motivating factor gave us continued encouragement to work with our children. Many people believe that parents should not work with their own children—that it is much too difficult. I will have to agree that it is not easy, but this survey of the best boys in the United States did give us some valuable encouragement. And regarding practice, it is important to be sure to stop when the child indicates a desire to stop. A constant nagging of "just one more pail of balls" or "just another half hour" will do nothing but sour the attitude of the individual for the sport.

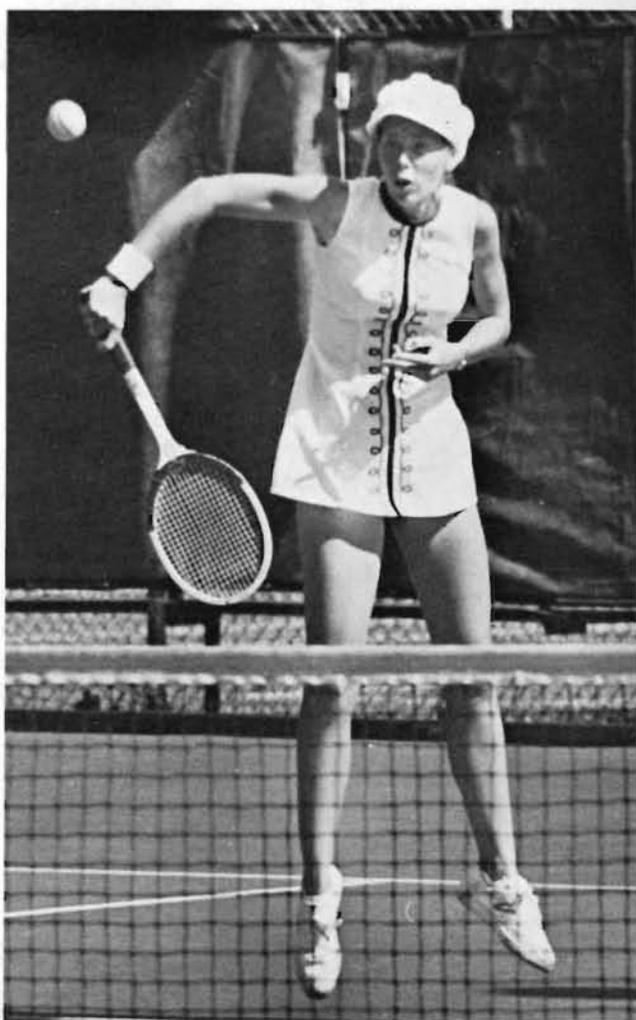
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The USLTA at Stowe



Tish Loveless, Championships director, left, and Rosemary Luther DeHoog '60, Fischer Tower official, during June's play.

Women's National Collegiate



Carrie Meyer from Marymount College in Boca Raton, Fla., singles winner of the 1974 USLTA Women's National Collegiate Championships held at Kalamazoo College in June. She defeated Lindsay Morse from California-Irvine, 6-4, 2-6, 7-6, in a thrilling finals match. The team championship in the tournament went to Arizona State.



Lindsay Morse, California player, who took second place honors in both the singles and the doubles.

Junior and Boys' 16



Rolla Anderson, Championships director, and Fred Fischer during the 1974 matches.



Ferdi Taygan, Framingham, Mass., and Bill Maze, Orinda, Calif., at conclusion of finals match in the 1974 National Junior and Boys' 16 Championships at Stowe Stadium. Taygan won over Maze, 6-3, 7-5, 6-7, 6-3. Standing at the net is Sandy Wiener, Grosse Pointe, official referee of the tournament.



At the awards ceremony: Bill Maze; President George N. Rainsford of Kalamazoo College (both Jean and George Rainsford are avid tennis players); Ferdi Taygan; and Lou Slavin, College trustee, who served as general chairman of the 1974 Nationals.

The USLTA and the Junior Tennis Program

By ROLLA L. ANDERSON

Rolla L. Anderson is director of athletics and professor of physical education at Kalamazoo College. He has served as tournament director of the National Junior and Boys' 16 Championships since 1957. He is chairman of the USLTA Junior Tennis Tournament Program, member of the USLTA Sanction and Schedule Committee which is responsible for the Junior Circuit, first vice president of the Western Tennis Association and member of NCAA Committee on Credentials for 1972-74.

The game of tennis is becoming extremely popular. Great numbers of people playing and watching the game, the number of courts being built, the immense sale of equipment and tennis accessories, the large number of quality players, and the amount of money the professionals are earning are evidence of this popularity. It is being said that the '60s belonged to golf and the '70s to tennis.

Perhaps the single greatest influence has been television. The match between Bobby Riggs and Billie Jean King was seen by more than 30 million people, many of whom were not fully knowledgeable about the game, but enjoyed it nevertheless. During this last year, Rod Laver earned more than \$200,000 and Billie Jean King won only a few thousand dollars less.

Also important in the recent growth of tennis has been its moving from the country clubs to public facilities, making courts available for the general

public, especially during the winter months. The use of indoor courts has had a significant impact upon the quantity of play at the adult and junior levels as these courts provide the opportunity for play the year around throughout the country.

Currently, several organizations hold instrumental roles in promoting, controlling, and regulating tennis in the United States. The oldest and most influential agency is the United States Lawn Tennis Association (USLTA). Other organizations actively involved in tennis are World Team Tennis (WTT), World Championship Tennis (WCT), Women's Tennis Association (WTA), Association of Tennis Playing Professionals (ATPP), United States Professional Tennis Association (USPTA). As all these associations except the USLTA are devoted to one particular phase of tennis, this article will be devoted to exploring the organization and function of the USLTA, especially its junior tennis program for which Kalamazoo College has provided exceptional leadership.

The composition of the USLTA includes individual memberships, as well as sectional associations, and direct member clubs. The sectional associations, numbering 17 and ranging in size from one-half state to a five state area, are the units for promoting tennis at the regional level. Each sectional association is divided into districts and an unspecified number of tennis clubs make up a district. Each of these lower divisions provides

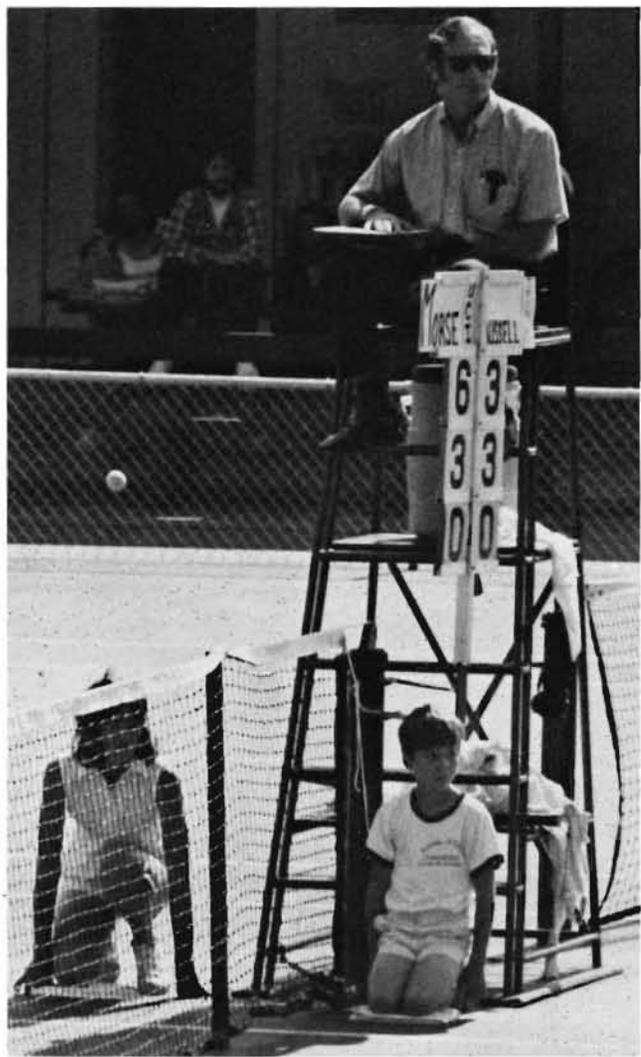
opportunity for play and development at its level. Individual memberships to the USLTA cost \$8.00 for adults and \$4.00 for people under 18 years of age. This fee accords the member the privilege of playing in sanctioned tournaments of the USLTA and also includes a subscription to the USLTA magazine. To be able to play in a sanctioned tournament and to be ranked, a player must hold membership in the USLTA. Currently, there are about 31,000 adult memberships and 40,000 juniors.

The USLTA's main thrust is to provide competition for all age divisions at the local, district, sectional, and national levels. All of these divisions provide tournaments for the players, and these tournaments must be sanctioned by the USLTA or by its subdivisions. For play on the international circuit, the tournament must be approved by the International Lawn Tennis Association (ILTA).

One of the most rewarding and exciting programs of the USLTA is junior tennis for boys and girls who are 18 years of age and under. To provide leadership for this program, the Junior Tennis Council was formed several years ago. The Council is composed of the chairman, appointed by the USLTA president, and the chairmen and co-chairmen of six committees who are responsible for specific aspects of the junior tennis program. The program is divided into three major areas of interest: team and individual competition (tournament play), the development program for tennis players (education and research) and the program for top players (for boys: Junior Davis Cup; for girls: Junior Wightman Cup).

The sanction and schedule, tournament regulations, ranking and team play committees are responsible for providing tournament play for the junior players. David Markin, a member of the Kalamazoo College Board of Trustees, directs this part of the junior program and also serves as co-chairman of the Junior Davis Cup team.

The sanction and schedule committee selects and approves dates and sites for national tournaments for all age divisions (12, 14, 16, 18) and arranges the tournament circuit for the top boy and girl players in the United States. The circuit begins with play in late June in Northern California. After two weeks it moves to the midwest where special invitational and national tournaments are held, then concludes for most of the contestants about the middle of August. For a few of the top players, the circuit ends with the National Championships at Forest Hills in the latter part of August. At Thanksgiving time, the National Indoor Tournaments are held for both boys and girls in all age divisions. This extensive circuit involves more than 2,000 of the top boys and girls. While play for top performers is taking place,



Dave Markin, president of Checker Motors Company and Kalamazoo College trustee, is shown at the USLTA Women's National Collegiate Championships. He served as official referee. He is an important figure in USLTA circles.

players with lesser ability are participating in tournaments provided by sections and districts.

From the top 2,000 players, about 40 in each of the age and sex divisions are ranked from one to 40. The ranking committee has the responsibility to rate the players according to their ability. At the end of the summer season each of the eight committees compiles the tournament record data of the players, and then ranks players according to the results of their season play. Some of the committees have tried using the computer for this purpose, but it hasn't proven to be successful. Players who do not participate in the national program also are ranked in the district and section in which they are members by ranking committees appointed by the sectional and district officials.

In addition to furnishing competition on an individual basis, the USLTA affords opportunity for

team play competition. Each district association selects the best six or eight players for both boys and girls to form teams that are known as District Junior Davis Cup and District Junior Wightman Cup teams. Early in the summer season, a sectional tournament is conducted for those district teams. Each of the 17 sectional associations also forms Junior Davis Cup and Junior Wightman Cup teams, and the USLTA holds a national tournament for them in early August. Team competition is afforded to the cities in the United States, too. Several years ago, the USLTA instituted a national city team tournament for both boys and girls. More than 60 boys' teams and 50 girls' teams vie annually for the National City honor. Competition begins early in the summer season with teams playing against each other to qualify for the top eight spots. In mid-August, the top eight teams for boys and girls are brought to two separate selected sites for the national city championships. In 1966 and 1968, the city of Kalamazoo, under the leadership of Dr. A. B. Hodgman, played in the National City Girls' Tournament and in 1968 Kalamazoo won the national championship.

Another division of the junior tennis program is education and research. This division is primarily concerned with getting people to play tennis and providing opportunities for improvement of their play. The office serves the districts, sections, clubs, individuals and other organizations by providing them with publications, films, and materials covering practically every phase of the game. Some of the topics and publications available include information on organizing a tennis program, teaching teachers how to instruct players on an individual or group basis, understanding the techniques and strategy of playing tennis, and conducting tournaments. Films are also available on practically every aspect of the game. In addition, the office has a network of regional consultants who serve as counselors for organizing tennis programs, for training of teachers, for funding of programs, and for the construction of facilities. The office has been particularly instrumental in providing clinics, seminars, workshops, and conferences for the training of teachers for both individual and group instruction. Additional information and availability of materials can be obtained by writing The Education and Research Office, 71 University Place, Princeton, New Jersey 08540.

Another division of junior tennis is the excellent program for the top 15 boys and 15 girls in the United States. Each year the USLTA singles out these top players to provide them with instruction, coaching, and tournament competition. Most future stars of tennis come through this program, designed to assure the United States of some of the top world

performers. For the boys, the program begins in mid-June when they are invited to a camp for two weeks to try out for the Junior Davis Cup team. The chosen Junior Davis Cup players, at the expense of the USLTA, play in tournaments for both juniors and men for the entire summer. The schedule begins with play in Northern California Hard Court tournaments and culminates at the National Championships at Forest Hills in late August or early September. At the Women's National Collegiate Championship matches in mid-June, part of the squad of the Junior Wightman Cup program for girls is selected, beginning play immediately afterward in women's and girls' tournaments throughout the summer, ending with the National Championships at Forest Hills. Both teams are accompanied by a coach who works with players individually and collectively during the season. At the end of the summer months, one can usually see a dramatic improvement in the quality of play for each person. Some of the players are afforded three years of this training.

Kalamazoo College has been actively involved with the junior tennis program. Its exceptional facility for tournaments (Stowe Stadium) is known across the country. Its personnel has given leadership to all levels of the tennis program — local, district, state, and national tournaments. The College has been host to the NCAA College and University tournaments, the USLTA Women's Collegiate Tennis Championships, and for 32 years the National Junior and Boys' 16 Tennis Championships.

The late Dr. Allen B. Stowe of Kalamazoo College was probably the single most potent leader in shaping the USLTA junior tennis program and in attracting many tournaments to Kalamazoo. George Acker, Tish Loveless, and Rolla Anderson of the College continue to carry on this tradition and leadership and, currently, hold key posts in the USLTA.

The increased popularity of tennis has brought a major change, not only in the way the USLTA looks at amateurism, but also in its attitude toward the men and women tournament players. Many changes have been made in the tournament program and more alterations are predicted. The strength of several different playing professional organizations has had an impact on the USLTA, and with the advent of World Team Tennis, some minor problems have arisen for the USLTA tournament circuit. Certainly the growth of tennis has improved the quality of the tennis program being offered to junior players. But the most exciting thing about it is that people of all ages have found the game an enjoyable form of vigorous exercise. Tennis had not yet reached its zenith in popularity!

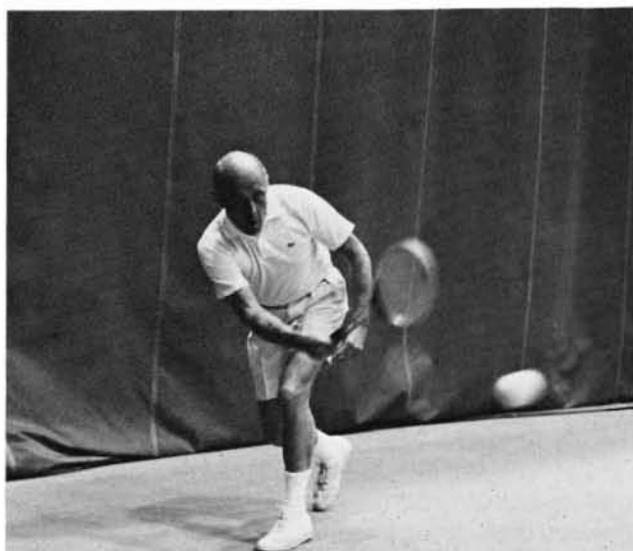
A Pro, an Alumnus, a Trustee



Stan Smith is surrounded by young fans after his exhibition match with Ismael El Shafei during the 1973 Nationals at Kalamazoo College. Stan Smith was junior winner in 1964 and has returned twice to play exhibition matches at the opening night ceremonies—the one in 1973 and a few years earlier with Arthur Ashe. "Tennis in Kalamazoo truly has community support—that's what makes it a pleasure to be there for the National Junior and Boys' 16 Tennis Championships. As junior champion and in later years when I twice played the exhibition match, this is what impressed me most. The Kalamazoo College facilities are excellent, the tournament is well-run—both would have to be top-flight to have carried USLTA endorsement for over 30 years. But, above all, the enthusiasm for tennis displayed in the city of Kalamazoo is extraordinary."



The new Vic Braden Tennis College is located at Coto De Caza in the Laguna Hills south of Santa Ana, California. Vic Braden, a 1951 graduate and licensed psychologist, has as his basic interest to design and activate research which will relate to the physical and mental well-being of the participant. He works with a full-range of instructional films, geometric teaching lanes, ball machines, closed-circuit TV, and instructional courts with a 30-foot-high master teacher's tower. The Coto De Caza facility also houses the National Foundation for Tennis Research which Vic heads, as well as the U.S. Professional Tennis Association which he serves as executive director. The photo shows him with tennis instructors from all parts of the country who are striving to pass USPTA standards and become accredited.



"How to improve your tennis and have a vacation too" is how All American Sports is introducing its new tennis camp on Amelia Island Plantation, the Sea Pines island resort of northern Florida. After almost thirty years in the advertising agency business, Alan N. Sidnam, 1937 graduate and Kalamazoo College trustee (pictured above), became president of All American Sports in July. He had served the company for many months as advertising consultant. All American Sports is a service company in the sports management field, involved in the management and marketing of tennis and hockey camps. Its most famous tennis camp is run for ten weeks every summer on the campus of Amherst College. This is probably the largest and one of the best known tennis camps in the world. Amherst is for adults. Similar camps for juniors were started last summer at Deerfield Academy and Hotchkiss School and also run for the summer months. The Amelia Island operation involves participants in group tennis instruction for half a day, and then for the balance of the time, they can enjoy swimming, sailing, bicycle riding, golf, etc. At the summer camps, various types of tennis instruction consume virtually all the daylight hours.

Contemplations of a Coach

By TISH LOVELESS

One cannot treat either an individual or a social organization as a means to an end absolutely, without robbing it of its life substance. . . . One cannot in the nature of things expect a little tree that has been turned into a club to put forth leaves. — MARTIN BUBER

Tish Loveless, a member of the Kalamazoo College faculty since 1953, is professor of physical education and director of women's intercollegiate sports. She also coaches the women's varsity tennis and field hockey teams. She was director of the National Women's Collegiate Tennis Championships this past June at Stowe Stadium and will again serve as director in June, 1975. She is a member of the USLTA Women's Collegiate Championship Committee. A fine tennis player in her own right, she teamed with Janet McCutcheon, Kalamazoo, to win the USLTA Coral Beach Club Invitational in Bermuda last fall, and they reached the quarter-finals of the National 35 and over Indoor Tournament this past May.

In 1953, I accepted the position at Kalamazoo College as Director of Physical Education for Women. My responsibilities were defined as directing the physical education and intramural programs for women. In addition to the development of these programs, my responsibilities would include classes in two areas—theory for prospective teachers in the field and required activities. Coaching was not included. This was perfectly reasonable since there was no intercollegiate program for women. It soon became apparent, however, that I would add coaching as another facet of my position.

Talks with students and an exhaustive search of the office files revealed that sound physical education and intramurals had long been a part of the total educational experience of the Kalamazoo woman. However, evidence of intercollegiate

activity at that time revealed only a Women's Michigan Intercollegiate Athletic Association (WMIAA) Tennis and Archery Tournament and intramural-type Sports Days—occasionally and spontaneously.

Through old *Indexes* and yearbooks, it appears that from 1910 to 1926, the one tennis team of the College consisted of both men and women. Women played against women from other schools and men against men. All points were scored together in determining the match winner. Tennis was included in the MIAA Field Day and points won by both men and women were included in the total Field Day scoring.

In 1927, women suddenly disappeared from the tennis team not to reappear in varsity tennis until 1938. That year, when the WMIAA Tournament was started at Kalamazoo, women again resumed tennis competition, but as a separate team. No other sports for women are mentioned as intercollegiate until 1943 when a swim team emerged to last for four years. In spite of the long heritage in varsity tennis, there was no evidence in 1953 that a true intercollegiate sports program for women had ever existed.

Tournament competition implies preparation, work, and performance. Herein lies one of the basic differences between students in a physical education class or intramurals, and students on a varsity team. The latter bring to the task greater interest, more dedication, and a somewhat higher skill level. To

prepare for a WMIAA Tournament, if it were to be meaningful, meant practices on a daily basis. These began in the early spring of 1954, and as many matches as possible were arranged with area schools. Very few were available.

My own experience on teams in my childhood left no doubt in my mind regarding the value of preparing oneself in a sport and feeling the challenge of testing that preparation. I had never accepted the fact that the opportunity for organized sports was either totally absent or very limited for girls and women in high school and college. In 1954, then, Kalamazoo College moved into a true intercollegiate program for women, with tennis and archery first, followed by the addition of field hockey and basketball in 1958, and more recently, swimming and volleyball.

From my point of view, any intercollegiate program has value only as the individual player—the participant—is the focal point. The value to her is the sole reason for the existence of the program. Sport is a total involvement in which there is a sense of being. The boundaries are drawn, the limits are known, and each person goes into a contest with clear parameters of functioning. There is a beginning, an end, and a result. There can be no concealment of one's reactions—nor one's abilities. A person is what she is in sport.

This is particularly apparent in a sport such as tennis, for the player is alone with the challenge. She must analyze and react to her opponent, make all decisions, and take full responsibility for her actions. The game is hers. It requires concentration, effort, control, self-sufficiency and determination.

This total involvement is at its best self-enlightening. Can you analyze? Can you keep the control of yourself and your game? Can you "turn off" all outside interference? Can you be determined to give your best at the moment? This does not imply that behavior in a tennis match will necessarily transfer to any other situation. It does, however, imply that sports provide an environment in which an individual can learn about herself through total commitment of self to the activity. Some students report that the only time they feel a sense of freedom and wholeness is while playing sports. Such revelation is not necessarily apparent to all players.

All decisions of a coach must revolve around providing the best experience, individually and collectively. A player must have the opportunity and guidance to develop her potential within the time available and within the framework of her relationship to other team members. This requires a commitment, self-discipline, respect for others, respect for the rules, experiencing disappointment and feeling achievement.

Competition between nearly equal opponents must be provided so that the outcome is not a predetermined fact. Keeping of school records or coach's records must in no way bring about pressures which take away the value of the sport to the player. While winning is understood as the desired end result of dedicated preparation, losing a game or match must not be equated with loss. A feeling of self-fulfillment as a result of playing one's best is the ultimate measure of gain.

The coach has the responsibility to be absolutely knowledgeable in the sport, in motor learning theory, and in the psychology of coaching. She must know her players and help them learn to cope with the frustration, anxiety, and tension which inevitably come with such total involvement. Theoretically, the tennis coach at the college level should be working with students who have acquired, at an earlier age, some skills specific to tennis. In reality, the coach is confronted with eager players representing a very wide range of ability. Some have specific tennis skills but cannot move well. Others have good fundamental motor patterns related to tennis, but few specific tennis skills.

The acquisition of the fundamental motor patterns (running, jumping, throwing, catching, striking, hopping and kicking) is a task of infancy and early childhood. If development of these is omitted or fragmented, the individual will be restricted in acquiring many complex sport skills. In addition, the concomitant muscular development and perceptual experience which enhance complex skill learning will have been denied. Given such early development, large numbers of complex sports skills can more easily be learned in late childhood and adolescence. With a hierarchy of skill development, a woman reporting to the college tennis team could be nearing her peak. The coach, then, would be helping the player refine her technique and providing expertise related to game strategy.

On all educational levels, from pre-school through college, girls must have the opportunity, instruction and incentive to acquire a hierarchy of skills with which to fully realize their abilities in sports. This opportunity and incentive have been denied the majority of girls by our system of competitive sports. Within our culture, competitive sports programs have principally been placed in the domain of males, while the grand educational benefits of such programs have been espoused. As a consequence, few women have arrived on any college campus at or near the peak of their skill level. No one would expect a college student to enjoy Shakespeare if elementary reading had to be learned after campus arrival. No one expects the college math professor to start with third grade math and take the student through calculus. The

baseball coach would not keep a player who could not throw and catch a ball.

These are not absurd analogies. Nor should this be construed as a reflection of Kalamazoo College women who have competed in intercollegiate sports, for the records show that they have been able to more than hold their own with the colleges and universities on their schedule.

It remains, however, that restrictions to play and thus to participate fully in sports have been placed upon the girl in our society. "You mustn't run, you might fall down and get hurt." "Boys don't like little girls who can beat them in a foot race." These are admonitions familiar to most little girls. If the will to pursue sports is not destroyed, at least the desire for accomplishment is diminished. And without desire for such achievement, schools have seen no need to provide funds, space to practice and enough knowledgeable coaches.

The current and long overdue questioning of the legality in providing tax funds for school programs which discriminate by sex is very important in the future development of girls' and women's varsity athletic programs. Funds, heretofore very small or totally lacking, must be provided, which are equivalent to those expended for boys and men, if girls and women are to have equal opportunity in sports.

There are knotty problems and dangers ahead. As one who believes firmly in the value of sports and who believes that opportunity in sports must be equal, I view with much concern the direction in which athletic programs for women move. I am fearful that with the emergence of comprehensive and sophisticated programs, the value of the sport to the individual may be lost as schools become preoccupied with building dynasties of athletic supremacy. Winning records must not become more important than individual growth.

ACKER *(Continued from Page 7)*

As the four girls began to compete, traveling to tournaments became very expensive. We decided to invest in a small trailer which helped us to cut our costs. This was quite a satisfying experience for several years, but as the girls got older we found that living with six people and two dogs in one small trailer did not create the best environment for competition on the courts. So we drifted away from that great savings. But playing tournaments in the United States with entry fees, travel, and lodging is expensive. We have been most fortunate that the girls have met wonderful families in various communities where they have played and have been invited back to stay with these families in following years.

Their competition has, of course, been a most rewarding experience to us as parents. We are pleased that our girls like to play tennis, especially since I know so many coaches who have children who just do not take to the game. Through tennis, our family has enjoyed recreation together and the opportunity to stay fit. We have had educational

vacation trips which I am sure we would never have taken had we not had a tournament in mind.

Of utmost importance, tennis has enabled us as a family to reinforce values which are established through sports. Participation in athletics and especially in tennis affords an individual the opportunity to learn fundamental principles of life. One learns to develop a competitive spirit, to prepare for challenges. One develops concentration which likewise assists in creating good study habits; reasoning and self-control develop through tennis as one learns to control one's head in order to control the ball. Tennis affords the player opportunity to gain self-confidence as he masters each stage of the game.

We encourage you to work with your children in the game of tennis. As parents, much of the satisfaction within our family has come not only from participating in tennis but from working with and enjoying our children during their developmental stages. We know tennis can be a great family sport—and it is definitely a sport for a lifetime.

MIAA Champions



Members of the 1974 Kalamazoo College women's varsity tennis team that won the 1974 WMIAA championship are, front row, left to right, Laurie Bowen, Spring Lake; Becky Talbott, Englewood, Colo.; Cheryl Bisbee, Reed City; Barb Pape, Troy; Polly Yocum, Ann Arbor; Jane Pinkerman, Holland; Bonnie Andrews, Dowagiac; and Jere Brooks, Waukegan, Ill. Back row, Tish Loveless, coach; Roberta Righter, Birmingham; Muffie McKearnan, Evanston, Ill.; Marge Snyder, Evergreen, Colo.; Jo Copeland, Webster Groves, Mo.; Lisa Culp, Wilmette, Ill.; Carol Saro, Huntington Woods; Mary Douglass, Grosse Pointe Farms; and Kathy Szmuszkovicz, Kalamazoo.



1974 MIAA champions on the men's varsity tennis team are, front row, left to right, Don Gregory, Pittsburgh, Pa.; Steve Thomson, Grosse Pointe Park; Mark Thomson, Grosse Pointe Park; Mark Zausmer, Oak Park; Mark Henderson, Terrace Park, Ohio; and Mike Thomson, Grosse Pointe Park. Back row: Rick Moore, Lapeer; Walter Vogel, Glenview, Ill.; Alex Dalrymple, Port Huron; Jerry Kessenich, Hastings; Dave Emig, Muskegon; Ola Eiritz, Gävle, Sweden; Paul Warshawsky, South Haven; Ron Cook, Midland; and George Acker, coach.

The Two-Handed Tennis Strokes

By RONALD A. COOK '74

Ronald A. Cook is tennis professional at the Bay Valley Inn Tennis Club in Bay City, Michigan. A 1974 graduate of Kalamazoo College, Ron was a member of the varsity tennis team for four years and was co-captain of the 1974 team. He was the assistant director of the first Kalamazoo College tennis camp this past summer and was director of the summer recreational tennis program in Midland, Mich., in 1972 and 1973.

The two-handed strokes first gained prestige in the tennis world in the backhand of Vivian McGrath in the early 1930's. "His game was dominated by his remarkable two-hander. He could hit it flat down the line, fairly belt it down the middle, whip it sharply across court and toss it unexpectedly with the same backswing he used for a drive. Most dramatic of all, perhaps, was his ending of rapid-fire volleying exchanges in doubles with two-handers of bullet-like speed."¹

McGrath defeated Ellsworth Vines, holder of the Wimbledon and American crowns, at sixteen years of age. But although he was an inspiration to the youngsters of Australia, he never really developed into a top international star.

John Bromwich carried on the two-hand tradition begun by McGrath. "His backhand was his most reliable shot in a game thoroughly reliable all around. . . For shots wide of his two-hander he used one hand, but this was mostly a retrieved shot only; he could never cover the court as extensively as a one-handed player."²

Geoff Brown came along next. He hit "a hurricane two-handed forehand."³ The drawbacks to this shot are almost insurmountable. Brown's hands were crossed on the backhand side with the right

hand on top. Either he had to become an expert racket juggler or learn to hit a left-hand forehand, which later he did. Pancho Segura went the opposite way and did a lot of racket juggling to hit his two-handed forehand and his one-handed backhand. His forehand has been often described as the "greatest individual stroke seen up to that time."⁴

Between the mid-1950's and late 1960's, few players used two-handed shots. *Metzler's Tennis: Style and Stylists* (1969) reported "The two-handed style burst upon us in the early 1930's in the hands of an exceptional youngster (McGrath), was given a trial of over twenty years, and has been little seen since."⁵

Today the two-handed backhand has made an amazing comeback. Among the outstanding young players having great success with the shot are Frew MacMillan, Bjorn Borg, Billy Martin, Harold Solomon, Jimmy Connors, Chris and Jeanne Evert, and Laurie and Carrie Fleming.

There are some advantages and disadvantages inherent in the two-handed strokes. Among the advantages are power, control, disguise, and placement. All of these are due in large part to the double wrist brace. The disadvantages are found mostly with reach on volleys and groundstrokes. There are also problems with the follow-through and with hitting underspin and running shots. A review of the current literature points out the pros and cons.

The lack of reach with the two-handed shot seems to be considered its biggest drawback.⁶ This is a problem on any shot for which the player is not in perfect position. However, it is much easier to hit a one-handed shot that you have to stretch for than it

is to hit the same shot with two hands. Cliff Drysdale and Jimmy Connors "both let go of the racket with the other hand when they have to reach far out, sideways, or forward."⁷ Bill Lenoir concurs that reach is lost, but he does not think it is much of a detriment on groundstrokes if the player is quick on his feet. He does agree that the biggest disadvantages are at the net in handling low balls and lack of reach on volleys.⁸ He has gone to a one-handed volley as has Jimmy Connors.

The two-handed volley is not recommended unless it is limited to putting away high stroke volleys.⁹ None of the top ranking players, with the exception of Miss Evert, uses two hands on anything at the net but the high put away volleys.

There is also trouble when running wide. It is generally easier to slice or chop this shot, but this is difficult with two hands on the racket. This has been a problem for Chris Evert. She "has trouble generating power on the shot when running wide."¹⁰

Underspin is the best way to control the low short balls and it is next to impossible with a two-handed stroke. *World Tennis* explained difficulty to generate any power or depth on this shot: "the left arm has to move down and stop short. . .but who needs it if you can achieve accuracy without so much underspin."¹¹

What happens on the follow-through was started when the ball was on the strings. "Any unnatural stretch should be avoided. It is better to keep the follow-through on the short side to avoid being off balance on the next shot."¹² Drysdale hits a full wallop shot in which the racket goes all the way around his neck. He is probably not pressing out on the ball as far as possible. Chris Evert ends with the racket on the follow-through pointing in the direction of the ball's flight. She does not have the power that Drysdale generates, but her follow-through is excellent for control and balance.¹³

For most beginners the backhand is the more difficult stroke. "The backhand requires a stronger wrist than the forehand because there is little besides the thumb behind the racket to brace the shot upon impact with the ball."¹⁴ Backhand errors are usually the result of insufficient strength or a wrist that moves on impact. On the two-handed backhand the two wrists reinforce each other. Solidity leads to precision and lessens the chance of errors. The fundamental advantage then is one of overcoming a weak wrist; the other advantages are contingent upon the gain in strength in using the double wrist brace.

Control, too, often improves with the two-handed backhand. "The most erratic one-handers are those who would probably benefit most by going to two hands."¹⁵ Lenoir agrees that use of two hands (he used two hands on both sides) "can be an asset on

groundstrokes in that it may give added control."¹⁶ That two-handed shots can be extremely well controlled is evidenced by both Chris Evert and John Bromwich.

Disguise is another factor favoring the two-handed shot. The one-handed backhand can be fairly well disguised if the player crouches and gets well turned to make the shot. The player with the two-handed shot is forced to get into better position. Chris Evert's backhand is often complimented for its "expert disguise" and her ability to pass with extreme accuracy.¹⁷

That a two-handed shot can generate a good deal of power is evidenced by the two-handers of Vivian McGrath, Drysdale, and Connors. Evert can really whack that two-handed backhand when she wants to. Peaches Bartkowicz hit a two-handed backhand that was "one of the most powerful groundstrokes in the game."¹⁸ The shoulders automatically pivot to put weight into the two-handed shot, adding to the power of someone who does not pivot.

Many coaches do not believe that the two-handed backhand is the most advantageous shot to use, including Jimmy Evert, but along with Evert they are beginning to see advantages to teaching it to youngsters who are more comfortable that way.¹⁹ As Dave Kornreich says in *World Tennis*, "I am beginning to see great merit. . .in teaching this two-handed backhand stroke to certain beginners. One must always consider the strengths and weaknesses of the pupil. Some youngsters do not have the strength in their racket arm to develop a good backhand, and many women are unable to practice regularly after a lesson. As a result, the elbow frequently leads the racket or the stroke finishes without a follow-through. The two-handed backhand will give these players the necessary strength to execute the full stroke and it will generally prevent the elbow from leading."²⁰ This lack of strength in the racket arm is the reason given most often for teaching the two-handed backhand to children. Butch Bucholz says, "A relatively painless method for learning the shot is to hit it with two hands until the feel is acquired."²¹ Bill Lenoir feels that his early success at the game (which he attributes to using two hands to control the racket) was instrumental in inspiring him to practice and develop good groundstrokes. "I started with two-handed shots the day I first picked up a racket, which was at the age of eight. It was a natural style for me."²²

Pancho Segura started with two hands because he was so small when he began to play. "Because he was too small to swing the racket with one hand, he developed his now famous two-handed forehand." Jack Kramer considers Segura's forehand to be the best single shot in tennis.²³

Among those who do not recommend two hands, there are many who see value in using the left hand to "control the racket head throughout the backswing, and most of the forward swing to hit the ball."²⁴ This helps the child who is not very strong to get the racket head to push through the ball.

The two-handed backhand is advocated by some coaches to correct problems of the loss of timing and the inability to hit freely with a good follow-through. "By hitting with two hands, you will automatically turn in your shoulder on the backswing, the chances of the elbow leading become much lower and the follow-through automatically brings your weight into the ball."²⁵ Excessive wrist action and a too long backswing can also be corrected by use of the left hand.

There is some difference of opinion among coaches and players as to how difficult it is to change from using two hands to using just one. The backhand grip should be used by the right hand. It is easier to go down the line with this grip; one can hit an occasional shot with one hand if the grip is correct; and it is easier to learn the one-handed shot later.²⁶ "Once the two-handed stroke is mastered, it becomes relatively easy to drop the left hand and hit a full, free, one-handed drive."²⁷ Changing to a one-handed shot is more difficult the longer one has used two hands. It is also recommended by most coaches that the one-handed volley be used as soon as the wrist is strong enough.²⁸

If one considers carefully these advantages and disadvantages of the two-handed strokes, and if used they are carefully executed, the merits seem to have outweighed the pitfalls.

Footnotes

1. Metzler, Paul, *Tennis: Style and Stylists* (New York: The MacMillan Company, 1969), p.88.
2. *Ibid.*, p. 89.
3. *Ibid.*, p. 97.
4. *Ibid.*, p. 98.
5. *Ibid.*, p. 98.
6. David Kornreich, "Tips on Tennis—The Two-Handed Backhand," *World Tennis*, September 1970, p. 36.
7. Bill Lenoir, "The Two-Handed Shot," *World Tennis*, February 1963, p. 46.
8. *Ibid.*
9. J.D.H., "All About the Two-Handed Backhand," *World Tennis*, January 1974, p. 43.
10. Steve Fenk, "A Pre-Final Interview with Chris Evert," *World Tennis*, August 1973, p. 22.
11. J.D.H., *op. cit.*, p. 44.
12. *Ibid.*, p. 43.
13. *Ibid.*, p. 43.
14. John Kenfield, "The Backhand Drive," *World Tennis*, September 1962, p. 54.
15. J.D.H., *op. cit.*, p. 44.
16. Lenoir, *op. cit.*, p. 46.
17. Vincent Hanna and Julie M. Heldman, "The Young Champion," *World Tennis*, November 1971, p. 60.
18. Julie M. Heldman, "Peaches Bartkowicz," *World Tennis*, March 1967, p. 40.
19. Neil Amdur, "All in the Family," *World Tennis*, April 1972, p. 66.
20. Kornreich, *op. cit.*, p. 36.
21. Butch Bucholz, "The Backhand Drive," *World Tennis*, March 1973, p. 35.
22. J.D.H., *op. cit.*, p. 44.
23. Mike Davies, "Pancho Segura," *World Tennis*, October 1967, pp. 38, 39.
24. Bucholz, *op. cit.*, p. 55.
25. Pancho Segura, "What's Wrong With My Backhand?," *World Tennis*, September 1973, p. 20.
26. J.D.H., *op. cit.*, p. 43.
27. Kornreich, *op. cit.*, p. 36.
28. J.D.H., *op. cit.*, p. 45.

The Tennis Serve: A Film Analysis

By ROSEMARY LUTHER DeHOOG '60

Rosemary Luther DeHoog is a teaching pro at the Wolf Hollow Racquet Club in Syracuse, N.Y., and is director of the Summer Tennis Program in Baldwinsville, N.Y. Following graduation from Kalamazoo, she did graduate work at Teachers College, Columbia University, and at the University of Wisconsin. While a student, she played #1 singles on the women's tennis team and was four times WMIAA women's singles champion. In 1959, she was a semi-finalist in the Women's National Collegiate Tournament. This year she was Sedgwick Farm Tennis Club women's singles champion and mixed doubles champion of the Tennis Association of Central New York. In 1974, she became the first woman in the central New York area to be certified by the United States Professional Tennis Association.

Of all the skills in tennis, the service is the most complex and probably the most frustrating to the player. Because it is the only stroke not interfered with in any way by an opponent, the service should be one of a player's more potent offensive weapons. Thus, the lack of a consistent and well placed serve often makes the difference between a good player and an excellent one. When an instructor tries to improve the stroke by observing the server's technique, it is easy to look at the beginning and ending phases of the movement. But during its force-producing phase, the hand or implement or both are moving so rapidly that it is difficult to observe what is really taking place without some kind of visual assistance. To this end, film analysis can be a very important adjunct to teaching and, hopefully, to better learning.

Many teaching pros now are using videotape analysis to derive different kinds of information—the most frequent being the diagnosis of specific stroke difficulties of an individual. Tape can be

stored, and after a period of time more videotaping can be done for comparison purposes.

In this particular study, using procedures developed and used at the University of Wisconsin, Madison, 16 mm. film was used rather than videotape. The viewing mechanism was a microfilm reader which made possible the viewing of the service motion, frame by frame.

The main purposes of this analysis were: (1) to identify the force development phase of the serve and (2) to identify the contribution of the various body joints and segments during the force development phase. In other words, to identify when and how force is produced.

There are some definite conditions of this film analysis which must be considered. (1) This study represents the motions and movements of a single subject. For generalization to take place, the films of many subjects should be studied and the findings compared. (2) The work of this study is supported by other analyses and, in general, the findings are similar. (3) An individual's style always raises questions in a study of this kind. If a movement is observed in one film which may or may not be common to the others, then an attempt should be made to explain the need for that action in terms of its contribution to the total movement for that particular player.

Three simultaneous views of the subject were taken on 16 mm. film: side, front, and overhead. The subject was marked by black and white strips on each of the shoulders, white bands on the forearm including a belt which protruded from the forearm band, spinal and pelvic belts, and a black strip located on the tennis shoes just below the

ankle bone. By measuring the movement of these bands from frame to frame, movement over time was observed. Each frame of the film during the force development phase was projected in the microfilm reader, a tracing of the subject was made on graph paper, the joint angles were measured on each tracing, and then this information was graphed. Thus it was possible to get a useful visual representation of the joint movements within a given period of time. Time was measured by an electrical timer as well as a conical timer which was visible on each frame of the film. A meter stick was held by the subject, and with certain mathematical calculations, the actual distances were derived from the film measures.

The tennis serve consists of three rather distinct phases: preparatory, force development, and follow-through. The preparatory phase includes the backswing from the ready stance to a point of greatest lateral rotation of the arm with the racquet being inclined downward and held behind the head. In the force development phase, the racquet is swung quickly upward as the elbow extends to have the racquet meet the ball. The follow-through begins immediately after contact and continues until the racquet finishes downward across the left side of the body.

Only the force-producing phase was looked at in detail in this analysis as this phase was determined to be of the greatest interest and importance. On film, this included ten frames from each of the three views. Since it is generally recognized that the muscles that straighten the arm at the elbow can generate an awesome power, the analysis began at the point where the racquet is dropped farthest down the back. Thus the force-producing phase was studied initially with the elbow bent, and the racquet dropped down the back.

From the tracings made during the force-producing phases, the joint angles were measured and then graphed to provide an indication of the angular change at the elbow, wrist, left ankle, right hip, right knee, and left foot. The left knee and thigh were hidden by the right leg as the impact point drew near. The greatest angular changes occurred at the wrist (the angle between racquet and forearm), the elbow, and in hip and shoulder rotation. Some angular changes were observed in the right knee and right hip measurements, but the arm movements seemed to be most significant of the angular changes. One of the interesting things observed in this particular film was some vertical movement of the elbow while the racquet position behind the head was relatively unchanged. A front view of the server showed that the humerus (bone of the upper arm) can be observed to be rotating in the shoulder joint just before elbow extension begins.

Elbow extension appeared to have an important role in the power phase of the serve and was necessary to extend the length of the forearm and thus increase the length of the lever. However, elbow extension was observed to be perpendicular to the line of force of the action, thereby raising the question of whether or not the extension by itself contributes to force production.

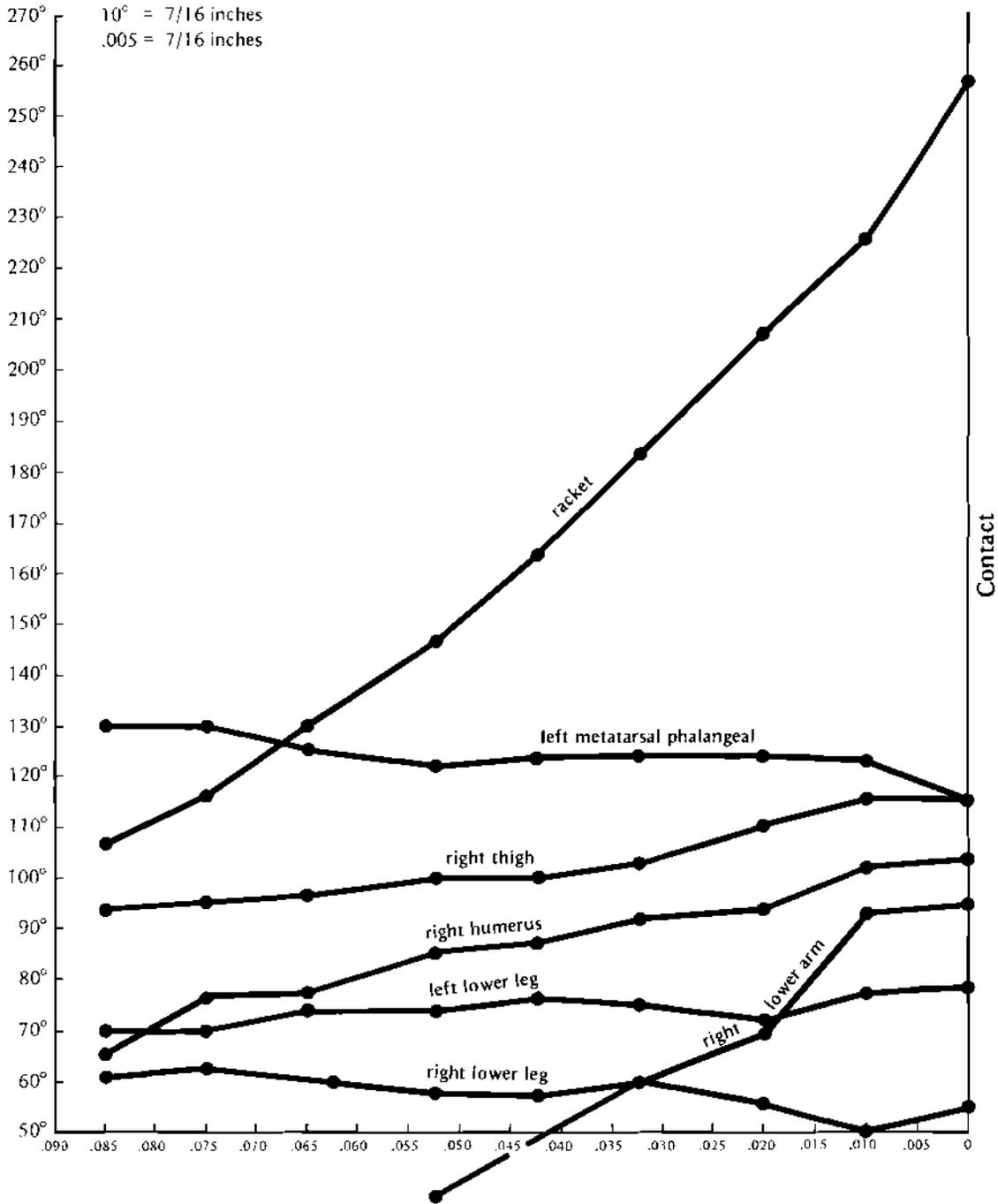
With the consideration that elbow extension may not be force producing in its range of movement upward, the angular changes still appeared to be significant when graphed, thus indicating another possible joint action. As the speed of the wrist was calculated to be approximately 70 ft./sec. and the speed of the ball about 114 ft./sec., the speed of the wrist alone did not seem to be capable of producing velocities of 100+. Therefore, other arm action seemed to be indicated. This other joint action was found to be medial rotation of the humerus. The actual contribution of medial rotation was calculated by subtracting the change in inclination of the right lower arm from the change in inclination of the right upper arm (humerus). The resultant change was the contribution of medial rotation toward the speed of the swing. By summing the contribution to force production by the wrist and that of medial rotation of the humerus, the arm and its related segments accounted for about 80% of the action during the force-producing phase.

The right hip and knee measurements were interesting in that the graph lines taken from these measurements were nearly identical in path and direction. Just before contact, the right hip and right knee and the left foot showed a pronounced downturn (flexion) just before an upturn (extension). These movements could well have been the final thrust that sudden flexion and extension would give to the body to attain the greatest height possible (on the toes) at impact. It should be stressed that the metatarsal extension gives added height and is not force producing. In general, the legs were found to be supportive, providing the base for hip rotation and the movements of the upper trunk.

Not only were the changes in actual joint movement measured but also the change in joint movement against a background reference point, usually a line or lines on the wall. This measurement is referred to as segmental inclination. Any forward motion of the body could be observed as well as the actual movement of the body segments through space. (See attached graph.)

It is interesting to observe that as the legs remained fairly stable in position, the inclination of the right upper arm, the right lower arm, and the racquet ascended proportionately. The head of the humerus about which the shoulder rotates traveled

Segmental Inclination



through 40° in .085 seconds. The right lower arm moved 100°+ in .085 secs. The third of these inclination lines is that of the racquet and it ascended the steepest of all, moving through 160° in .085 seconds. These three body segments, the right upper and lower arm segments, and the wrist

showed the wide range of movement generated by these parts in the force-producing phase of the serve.

The last area of significant movement during the force-producing phase is that of hip and shoulder rotation. Visually, both rotations are evident as the racquet is swung up into the ball. As was mentioned, in the description of the preparatory phase of the swing, when the arm rotates laterally outward, the shoulder must also move in that direction. Because the hip movement is influenced by shoulder movement, because of the spinal column, the coiling

The graph shows the right lower arm traveling through 50° in .050 secs. The bottom number on the segmental inclination graph should have been 0 to show this action completely. The inclination range of the right lower arm is 3° to 110° in .085 secs.

up, so to speak, has started before the force-producing phase. Thus when the rotation of the hips and the shoulders were observed during the force producing phase, it was a continuation of a motion started earlier. By the actual contact point, the shoulder rotation had stopped. However, the momentum built up during the rotation was enough to carry the right leg into the service court as the follow through began. It appeared, therefore, that hip and spinal rotation were present as the force-producing phase began and then medial rotation of the humerus along with the arm and wrist action completed the movement.

In summarizing the findings of this analysis, it is immediately apparent that the tennis serve is an extremely complex movement comprised of a series of movements and joint actions which must occur in sequence if the serve is to be successful. Wrist action ranging from hyperextension to flexion was found to be the single most important joint action contributing to force production. Other very important joint actions were the medial rotation of the humerus and the forward movement of the arm caused by elbow extension. Hip and shoulder rotations were important elements in the positioning of the body as well as in the contributing to force production just prior to contact. The legs were

largely supportive in action with some adjustive actions occurring in the left foot (toes) and the right knee which attempt to place the body on its toes so that maximum height can be achieved just before impact.

With an estimated 20 million Americans now playing tennis and large numbers seeking instruction, the ramifications of film study are far reaching. Visually, a teacher cannot always see what is happening or why, and certainly film analysis can provide valuable assistance. Many individuals write on tennis skills without really knowing the accuracy of what they are writing other than what has been traditionally accepted as being correct. To this end, film analysis should help in identifying points of emphasis now neglected or misplaced.

Interesting Reading

- Bradlee, Dick, *Instant Tennis*, New York: The Devin Adair Co., 1962.
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Faulkner, Edwin J. and Weymuller, Frederick. *Tennis – How to Play it, How to Teach it*. New York: The Dial Press., 1970.
Plagenhoef, Stanley. *Fundamentals of Tennis*. Englewood Cliffs, N.J.: Prentice-Hall., 1970.

Photo credits: Helen Brewer, photographer for 1974 Junior and Boys' 16 Championships; other press photography from Kalamazoo Gazette.

**1975 USLTA Tournaments
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Women's National Collegiate

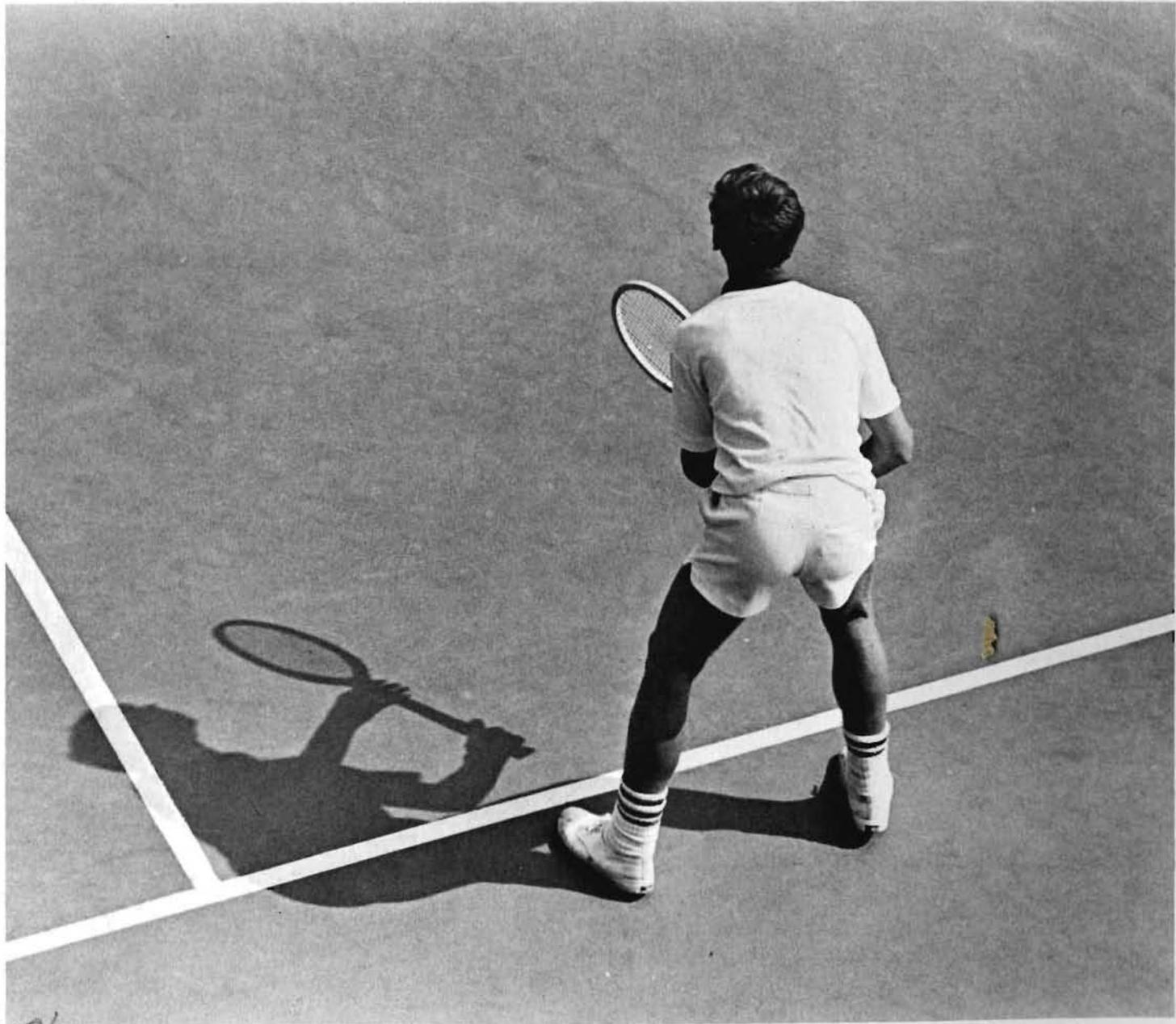
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38