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Sports Stars, Media visit Rte. 9 Shop

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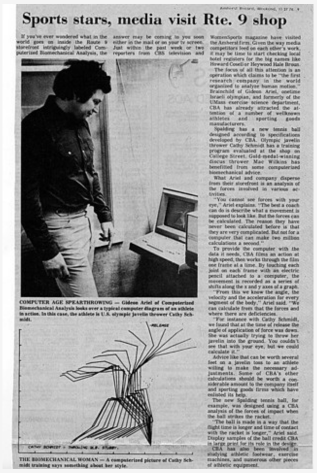
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Sports Stars and Media Visit Computerized Biomechanical Analysis Shop

The Route 9 storefront labeled Computerized Biomechanical Analysis (CBA) has recently been visited by reporters from CBS television and WomenSports magazine. The company, founded by former Israeli Olympian Gideon Ariel, is the first research company in the world organized to analyze human motion. CBA has attracted attention from well-known athletes and sporting goods manufacturers, including Spalding, which has a new tennis ball designed according to specifications developed by CBA.

CBA uses high-speed film and an electric pencil attached to a computer to record movements as a series of shifts along the x and y axes of a graph. This allows them to calculate the forces involved in various activities and identify deficiencies. For example, they helped Olympic javelin thrower Cathy Schmidt improve her technique by identifying that she was applying force at the wrong angle.

CBA has also been involved in studying athletic footwear, exercise machines, and other athletic equipment. Their analyses are expected to be valuable to both the company itself and the sporting goods firms which have enlisted its help.

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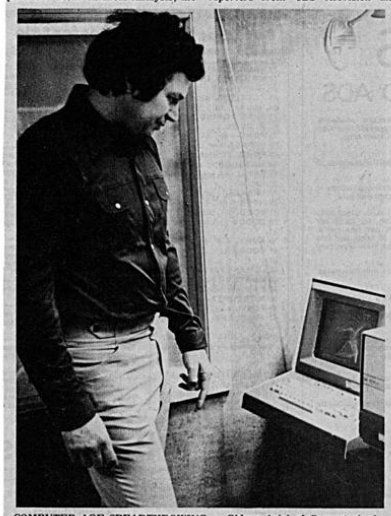
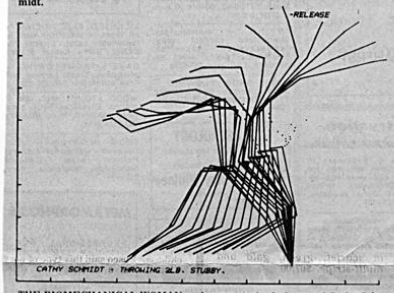
Sports stars, media visit Rte. 9 shop

If you've ever wondered what in the world goes on inside the Route 9 storefront intriguingly labeled Computerized Biomechanical Analysis, the answer may be coming to you soon either in the mail or on your tv screen. Just within the past week or two reporters from CBS television and WomenSports magazine have visited the Amherst firm. Given the way media competitors feed on each other's work, it may be time to start checking local hotel registers for the big names like Howard Cosell or Heywood Hale Broun.



COMPUTER AGE SPEARTHROWING — Gideon Ariel of Computerized Biomechanical Analysis looks over a typical computer diagram of an athlete in action. In this case, the athlete is U.S. olympic javelin thrower Cathy Schmidt.



THE BIOMECHANICAL WOMAN — A computerized picture of Cathy Schmidt training says something about her style.

The focus of all this attention is an operation which claims to be "the first research company in the world organized to analyze human motion." Brainchild of Gideon Ariel, onetime Israeli olympian, and formerly of the UMass exercise science department, CBA has already attracted the attention of a number of wellknown athletes and sporting goods manufacturers.

Spalding has a new tennis ball designed according to specifications developed by CBA. Olympic javelin thrower Cathy Schmidt has a training program evaluated at the shop on College Street. Gold-medal-winning discus thrower Mac Wilkins has benefited from some computerized biomechanical advice.

What Ariel and company disperse from their storefront is an analysis of the forces involved in various activities.

"You cannot see forces with your eye," Ariel explains. "The best a coach can do is describe what a movement is supposed to look like. But the forces can be calculated. The reason they have never been calculated before is that they are very complicated. But not for a computer that can make two million calculations a second."

To provide the computer with the data it needs, CBA films an action at high speed, then works through the film one frame at a time. By touching each joint on each frame with an electric pencil attached to a computer, the movement is recorded as a series of shifts along the x and y axes of a graph.

"From this we know the angle, the velocity and the acceleration for every segment of the body," Ariel said. "We can calculate from that the forces and where there are deficiencies.

"For instance with Cathy Schmidt, we found that at the time of release the angle of application of force was down. She was actually trying to throw her javelin into the ground. You couldn't see that with your eye, but we could calculate it."

Advice like that can be worth several feet on a javelin toss to an athlete willing to make the necessary adjustments. Some of CBA's other calculations should be worth a considerable amount to the company itself and sporting goods firms which have enlisted its help.

The new Spalding tennis ball, for example, was designed using a CBA analysis of the forces of impact when the ball strikes the racket.

"The ball is made in a way that the flight time is longer and time of contact with the racket is longer," Ariel said. Display samples of the ball credit CBA in large print for its role in the design.

CBA has also been involved in studying athletic footwear, exercise machines, and numerous other pieces of athletic equipment.